PGO All Terrain Vehicle Service Manual

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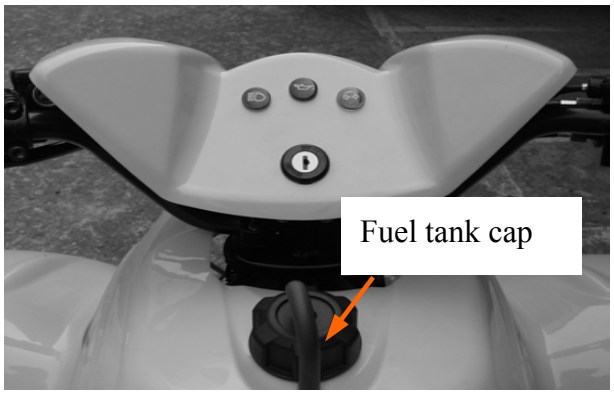
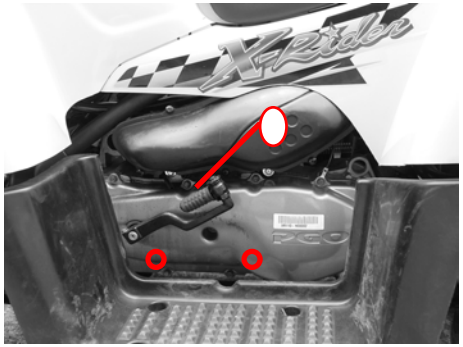
Manufactured by

Motive Power Industry Co., Ltd.

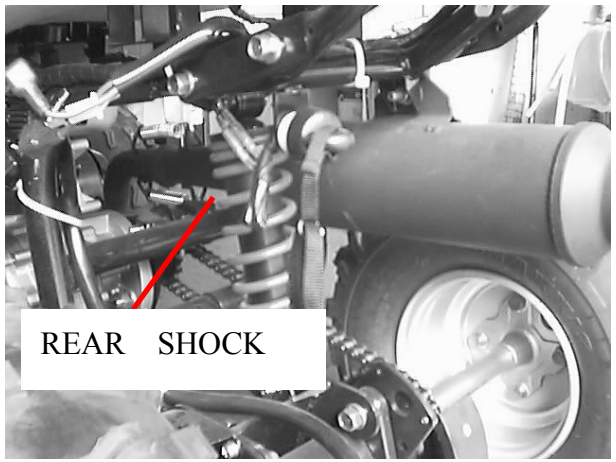
SPECIFICATIONS

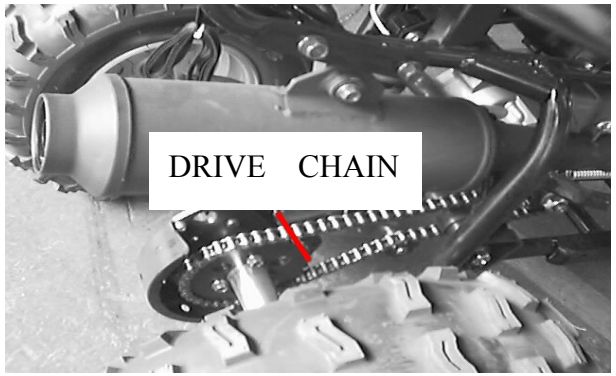
Model	XR50	XR110	XR150
ENGINE			
Displacement	49 / 82 cc	106.2 cc	150.1 CC
Cooling	Force air cooled	Force air cooled	Force air cooled & oil cooled
Type	2 stroke horizontal	2 stroke horizontal	4 stroke horizontal
Bore* Stroke	40 * 39.2 / 50 * 42	52.0 * 50.0	57.5 * 57.8 mm
Lubrication	Separated lub	Separated lub	Auto-separated lub
Engine oil	2 stroke oil	2 stroke oil	15W40 / 900 cc total
Fuel capacity	5.2 liter	5.2 liter	5.2 liter
Transmission	CVT belt	CVT belt	CVT belt
Drive train	Chain	Chain	chain
Gear shift	NA	Drive & reverse(Option)	Drive & reverse
Starting	Electric / Kick	Electric / Kick	
SUSPENSION			Electric / Kick
Front	Signal A arm	Signal A arm	Signal A arm
Rear	Swing arm	Swing arm	Swing arm
Travel	2.5 in / 6.3 cm	2.9 in / 17.3 cm	2.9 in / 17.3 cm
Rear brake	Hydraulic disc / Drum	Hydraulic disc	Hydraulic disc
Front brake	Drum	Drum	Drum
Foot brake	NA	Right foot (Option)	Right foot
DIMENSION			
Wheelbase	1000 mm	1000 mm	1150 mm
Overall dimension :L * W * H	1470 * 890 * 990 mm	1470 * 890 * 990 mm	1640 * 1015 * 1005 mm
Dry weight	268 LBS/ 128kg	284 LBS/ 129kg	361 LBS/ 164kg
Seat height	700 mm	700 mm	700 mm
Frt / rear tire	19*7-8 / 18*9.5-8	19*7-8 / 18*9.5-8	19*7-8 / 21*9-8
Signal indicator	12V-10W*4	12V-10W*4	12V-10W*4
Head lamp	12V-18W*1	12V-18W*1	12V-18W*1
Rear lamp	12V-21/5W	12V-21/5W	12V-21/5W

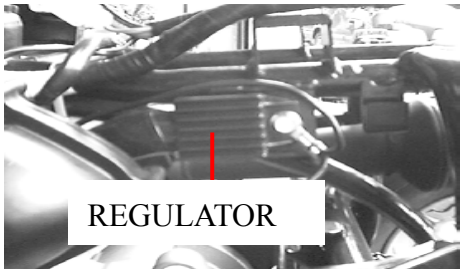

Fuel tank cap

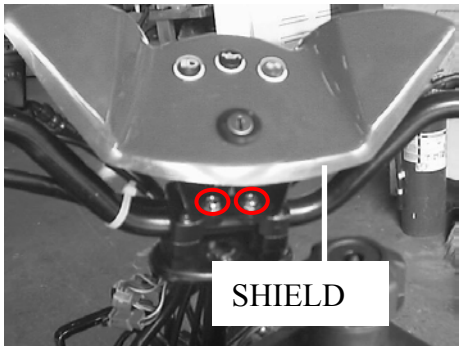


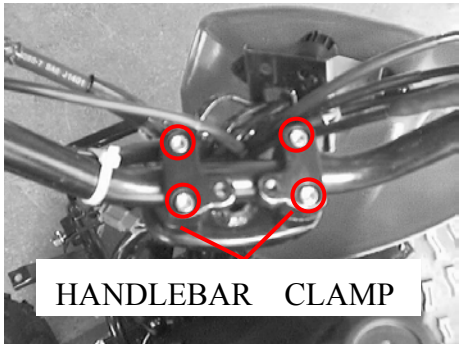
SAFETY COVER

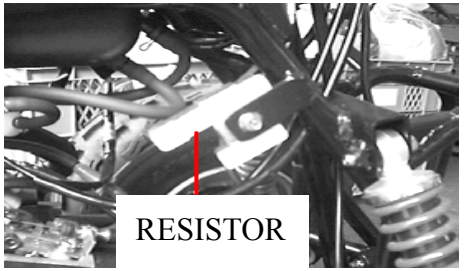

REAR SHOCK

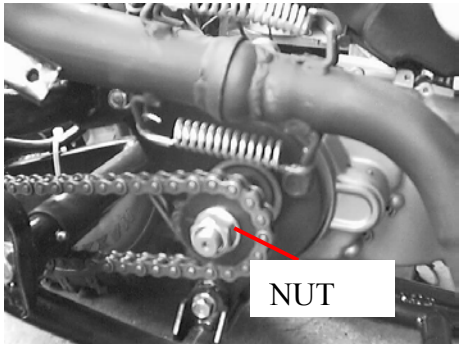

DRIVE CHAIN


REGULATOR

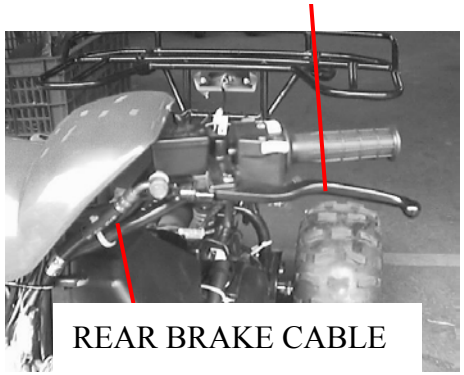

SHIELD

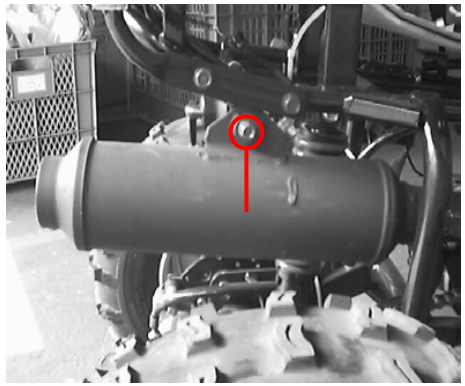

HANDLEBAR CLAMP

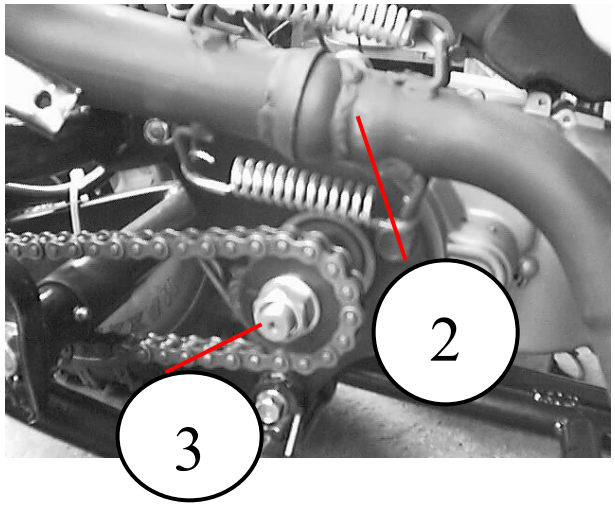

RESISTOR



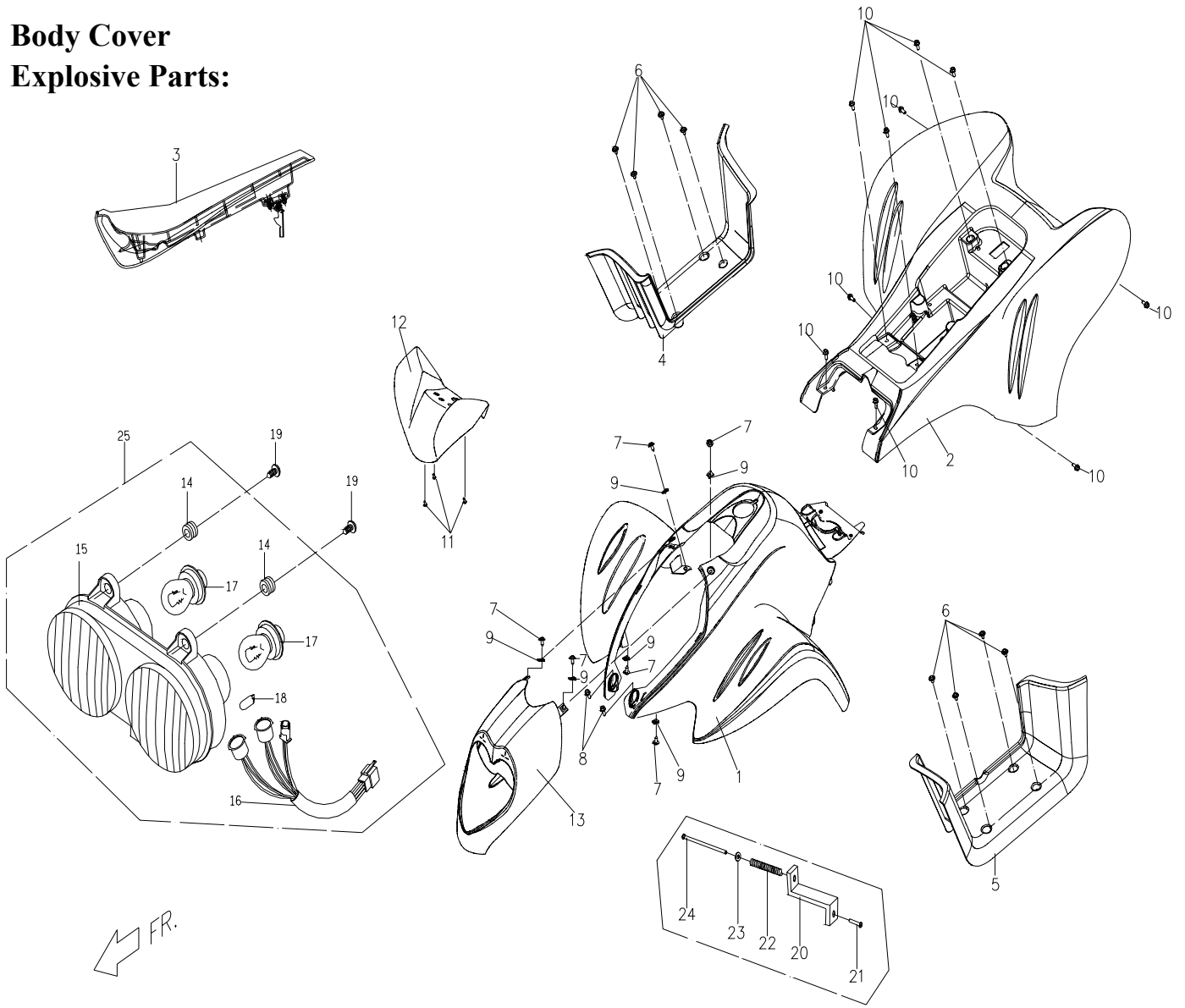
REAR BRAKE LEVER





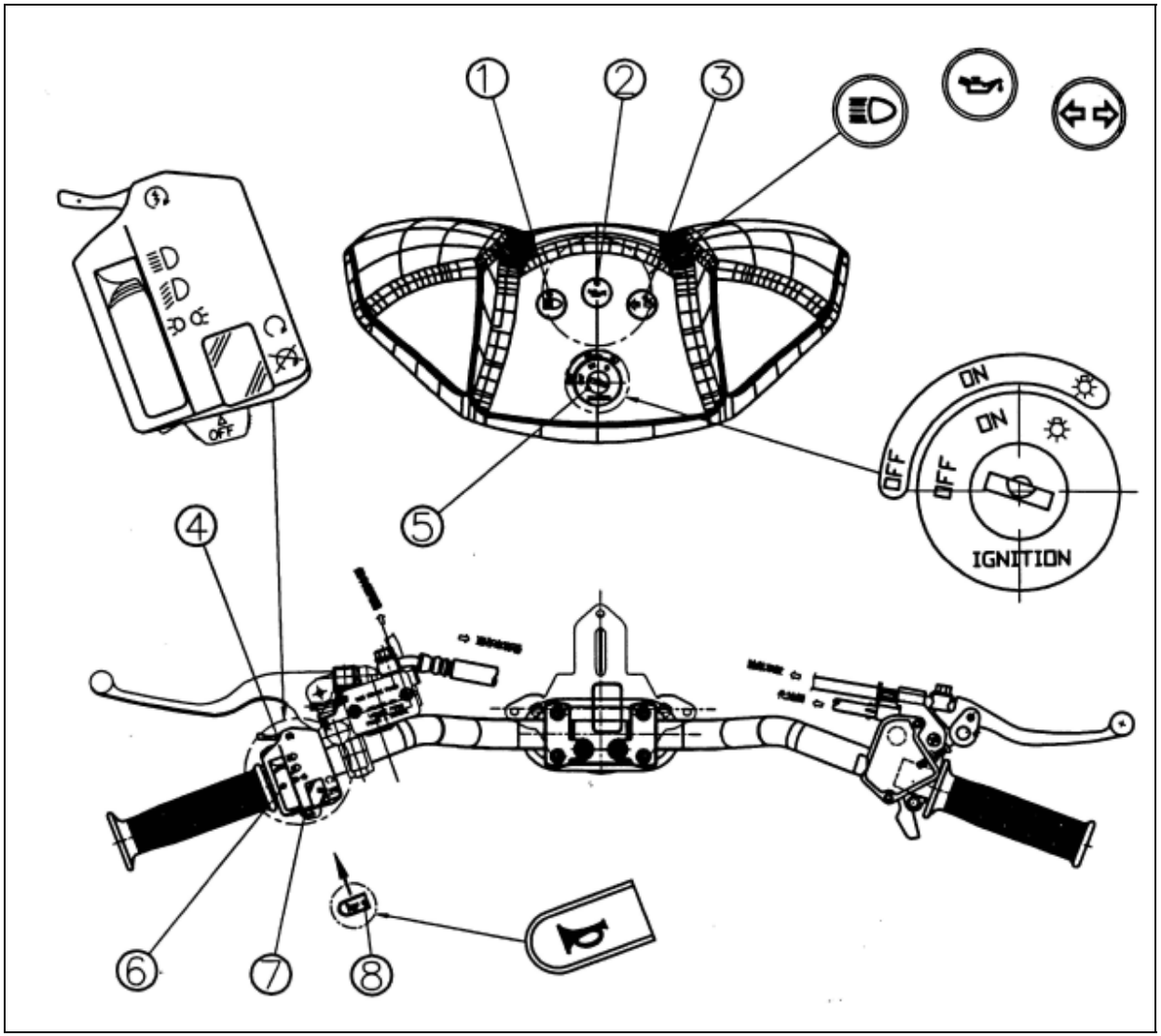


Body Cover
Explosive Parts:



01	FRONT FENDER
02	REAR FENDER
03	SEAT ASSEMBLY
04	FOOTBOARD (R)
05	FOOTBOARD (L)
06	WITH WASHER BOLT
07	TAPPING SCREW
08	PAN PHILLIPS BOLT
09	"DAMPER MAT , FOOTREST"
10	HEX BOLT
11	TAPPING SCREW
12	"COVER , HANDLE BAR"
13	HEAD LAMP COVER
14	RUBBER
15	HEAD LAMP COVER
16	CONNECTING WIRE
17	HEAD LAMP BULB
18	BULB
19	TAPPING SCREW
20	"ADJUSTING PLATE,
21	TAPPING SCREW
22	COMPRESSION SPRING
23	PLAIN WASHER
24	ROUND HEAD BOLT
25	HEAD LAMP ASSY.

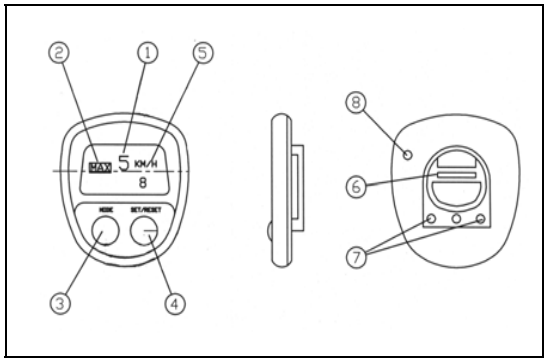
Operating indicator



NO.	DESCRIPTION	NO.	DESCRIPTION
1	far signal	5	power lock
2	oil indicator	6	lights switch
3	LEFT & RIGHT-TURN SIGNAL	7	turn switch
4	starter switch	8	bugle switch

Speedometer Counter(Optional)

1. Names of the parts



1. Speed display
2. Function indication
3. Mode button
4. Start/stop button
5. Unit of speed
6. Battery cover
7. Contact point
8. Reset button

2. Wheel circumference input

A. You have to input the wheel circumference(cm) for precious measurement. This parameter show at the right corner (item 5), you should press on the button SET/RESET until the corresponding value appears.(from 126 to 229), press on the MODE button to record it.

B. Recommended table

Rear tire (D) (Diameter * Width)	Wheel circumference(L-cm)
18 * 9	144
19 * 8	152
21 * 9	166
21 * 10	166
D(inch) * W(inch)	2.54 * 3.14 * D

3. This counter is powered by a 3.0 V Lithium battery. Whenever replace a new battery, you have to reset the parameters again.

4. Display and operation

Function	Display	Specification	Operation
Trip distance	DST	0.1 – 9999 km / mile	Switch by MODE Reset by hold SET/RESET & Press MODE
Daily trip distance	DST	0 – 999.9 km / mile	
Total distance	ODO	0 – 999.9 km / mile	
Average speed	AVS	0 – 99 km / mile	
Time display	TM	00:00:00 – 11:59:59	
Maximum speed	MAX	0 – 99 km / mile	
Speed	SPD	5 – 99 km / mile	
Clock		00:00 – 23:59	SET/RESET → MODE
Wheel circumference		126 – 229 cm	Hold SET/RESET & press MODE to select
Unit of speed		Km/h and mile/hr	
Daily trip distance	DST	When DST blinking	Hold SET/RESET & press MODE to select
Trip distance	DST	When DST blinking	
Non-touching Sensor distance		2 – 4 mm	Fixed in rear axle

(1) TORQUE VALUE

1. 2 stroke engine:

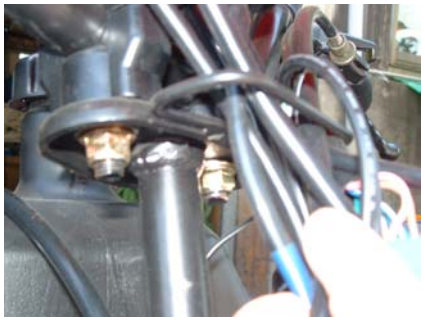
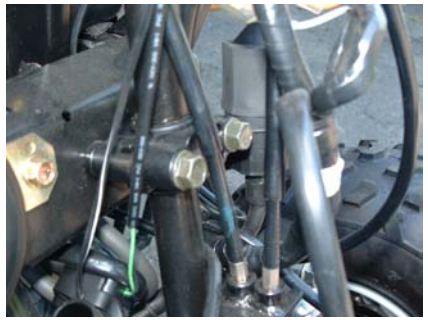
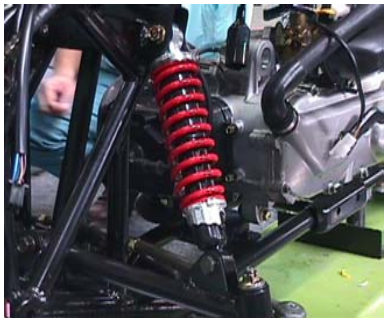
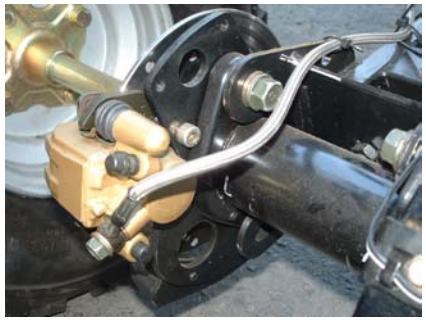
NO	Locking location	Q'TY	Thread dia. (mm)	Locking torque (kg-m)	Remark
1	Cylinder head	4	7	1.0~1.4	
2	Flywheel nut	1	10	3.2~4.0	
3	Rear brake lever	1	6	1.0~1.2	
4	Driving pulley nut	1	10	3.2~4.0	
5	Clutch outer nut	1	10	3.5~4.0	
6	Right crankcase	1	6	1.0~1.2	
7	Drive gear box cover	1	6	1.0~1.2	
8	Left crankcase	1	6	1.0~1.2	
9	Draining & filling bolt	1	8	1.8	
10	Inlet pipe	1	6	1.0~1.2	
11	Flywheel Magneto Stator	2	6	1.0~1.2	
12	Cooling Fan	1	6	1.0~1.2	
13	Muffler nut on cylinder head	2	6	1.0~1.2	
14	Muffler bolts on chassis	2	8	2.0~3.0	
15	Starting motor	2	6	1.0~1.4	
16	Spark Plug	1	22	2.5~3.0	
17	Fan cover	4	6	1.0~1.2	
18	Fixed plate, motoring idle gear	2	6	1.0~1.4	
19	Nut of rear wheel axle	1	14	8.0~10.0	
20	Kick starter	1	6	1.0~1.2	

2. 4 stroke Engine: (XR150)

NO	Locking location	Q'TY	Thread dia. (mm)	Locking torque (kg-m)	Remark
1	Cylinder head bolt A (intake)	2	6	0.9~1.1	
2	Cylinder head bolt B (Exhaust)	2	8	2.2	
3	Cap, oil filter graze	1	30	1.5~2.0	
4	Flange nut, cam shaft base	4	8	2.2	
5	Fixing nut, air valve adjustment	2	5	0.7	Greasing on thread
6	Guiding pin bolt, inner chain adjustment	1	6	0.9~1.1	
7	Oil bolt	1	8	1.7~2.0	
8	Fixing nut, clutch outer	1	12	5.0~6.0	
9	Nut, driven plate	1	12	5.0~6.0	
10	Nut, driving plate	1	12	5.0~6.0	
11	Spark plug	1	10	1.2~1.3	
12	Nut, drive clutch	1	22	9.0~10.0	Left thread
13	Screw, inner chain adjuster	1	6	0.4~0.6	

3. Chassis:

NO	Locking location	Q'TY	Thread dia. (mm)	Locking torque (kg-m)	Remark
1	Locking nut, steering stem	1	14	4.0 ~ 5.0	
2	Handle bar with steering stem	2	10	4.5 ~ 5.0	
3	Steering stem holder	2	8	2.0 ~ 3.0	
4	Wheel with hub(FRT & RR)	16	10	4.0 ~ 5.0	
5	Rear axle nut	2	27	9~ 10	
6	Front shock absorber bolt	4	10	3.5 ~ 4.5	
7	Rear shock absorber bolt	2	10	4.0 ~ 5.0	
8	Braking disc bolts	3	10	4.0 ~ 5.0	
9	Rear brake caliper bolt	2	8	1.5 ~ 2.5	
10	Chassis & engine hanger bolt	2	10	3.5 ~ 4.5	
11	Engine hanger bolt with engine	2	8	2.0 ~ 3.0	
12	Brake hose bolt	2	10	3.0 ~ 3.5	
13	Air release valve	1	6	0.6	
14	Front drum brake arm bolt	1	6	1.0	
15	Suspension arm bolt(RH & LH)	4	10	3.5 ~ 4.5	
16	Knuckle (RH & LH)	6	10	3.0 ~ 4.0	
17	Swing arm fixing bolt	4	12	5.0 ~ 6.0	
18	Swing arm & rear axle assy with chassis	1	14	8.0 ~ 9.0	

			
Steering stem nut	Handle bar nut	Steering holder	Wheel hub
			
Rear axle nut & disc screw	Frt cushion	Rear absorber	Swinging arm bolt & nut
			
Caliper bolt	Suspension arm bolt	Steering shaft nut	Engine bracket

4.Other parts please refer the following table:

Standard torque values:

NO	Item	Torque (kgf-m)
1	5mm bolt and nut	0.45-0.6
2	6mm bolt and nut	0.8-1.2
3	8mm bolt and nut	1.8-2.5
4	10mm bolt and nut	3.4-4.0
5	12mm bolt and nut	5.0-6.0
6	5mm screw	0.35-0.5
7	6mm screw	0.7-1.1
8	6mm flange bolt and screw	1.0-1.4
9	7mm flange bolt and screw	1.0-1.4
10	8mm flange bolt and screw	2.0-3.0
11	10mm flange bolt and screw	3.0-4.0

(2)Lubrication instruction:

A. Engine

NO	Lubrication location	Oil type	Remarks	Oil type	Remarks
	MODEL	2 STROKE ENGINE		4 STROKE ENGINE	
1	crankcase:rotating part, sliding part	premium 2 stroke motorcycle oil or SAE#30	Auto-separated Lubrication	premium 4 stroke motorcycle oil or SAE15W40	Auto-separated Lubrication Total 900 c.c. Replacement 800c.c
2	cylinder:rotating part, sliding part.				
3	drive gear box	SAE85-140	Total 110 c.c. Replacement 90c.c	SAE85-SAE140	Total 110 c.c. Replacement 90c.c
4	gasket of starter shaft	clean grease	(#3)	clean grease	(#3)
5	start idle gear sliding parts	clean grease	(#3)	clean grease	(#3)

(1) Periodical checking table:

1.[◯] mark indicates periodical checking

2.[＊] indicates changing the parts

Check item		Checking period							Judgement standard	Remark
		General checking	First Month Or Initial 500km	Home		Office				
				Per 6 Months Or 5000km	per12 months or 1000km	Per1 Months Or 1000km	per3 months or 2500km	per12 months or 10000km		
A Suspension Steering Handlebar	Loose,swing	◯		◯	◯	◯	◯	◯		
	performance	◯		◯	◯	◯	◯	◯		
					◯			◯		
Front fork	a.cracked			◯	◯	◯	◯	◯		
	b.shaft fixed condition			◯	◯	◯	◯	◯		From steering column
	c.shaft:loose				◯	◯		◯		
B: Brake										
Brake lever	a.clearance	◯		◯	◯	◯	◯	◯	Clearance: Front:10-20mm Rear :10-20mm	Check from Steering column
	b.movement of brake	◯	◯	◯	◯	◯	◯	◯		
brake	Loose or damage		◯	◯	◯	◯	◯	◯		
	Brake cables change								※per 2 years	
Brake cam	Worn out							◯		
Brake drum And brake shoe	a.clearance between drum and plate			◯	◯	◯	◯	◯		
	b.brake shoe and brake plate worn out				◯		◯	◯		
	c.brake drum worn and damage				◯			◯	Standard dia: Rear:85.0mm Limit of use: Rear:86.0mm	mark type
wheel	front axle:damage or cracked							◯		
	rear axle:worn or damage							◯		Check rear Axle
	Wheel pressure	◯	◯	◯	◯	◯	◯	◯	Unit:kg/cm*cm: 1 driver 0.28 -0.30	
	Wheel cracked Or damage	◯		◯	◯	◯	◯	◯		
	Wheel gap and worn	◯		◯	◯	◯	◯	◯	Gaplimit:front wheel: 0.8mm rear wheel 0.8mm	
	Wheel surface Or other metals	◯		◯	◯	◯	◯	◯		
	Axle nut screw Pin tightness			◯	◯	◯	◯	◯	Steering nut torque 4.0-5.0kg-m rear axle torque 9..0-10.0kg-m	Nut location
	Wheel rim swiNgness and daMage condition			◯	◯	◯	◯	◯	Swingness of front Rear wheel rim. Vertical swing:2mmbelow Horizontal ; 2mm below	

Check item			Checking period							Judgement standard	Remark
			Gen-eral che-cking	First Month Or Initial 500km			Office				
					Months Or 5000km	months or 1000km	Per1 Months Or 1000km	per3 months or 2500km	per12 months or 10000km		
Wheel	Front Bearing of axle, Looseness			○	○	○	○	○	○		
	Rear				○				○		
Damper	Rear damper spring cracked		○		○	○	○	○	○		
	ass' part loose or damage				○	○	○	○	○		
	Connecting part Loose					○			○		
	Bracket loose or Damage					○			○		
	Suspen-sion	Connecting Part loose				○			○		
	damper	Oil leakage				○		○	○		
		Cracked				○		○	○		
		assy's part, Loose				○		○	○		
Power Transmi-Ssion	Clutch and Change Speed mechanism				○	○	○	○	○		
					○	○	○	○	○		
	Supply grease				○	○	○	○	○	※per 2 year	
Electric Install-Ment	Ignition				○	○	○	○	○	Clearance: 0.6~0.7mm NGK:BP7HS NGK: CR7HSA	2T 4T
	Start mechanis m	Starting Motorpinion Meshing				○		○	○		
	wiring	Recharge Effect			○	○	○	○	○		
	battery	Electroly-Te quantit			○	○	○	○	○	Level between "UPPER" AND "LOWER"	
		Electroly-Te s. gra-vity				○		○	○	WHEN 20℃ SPECIFIC GRAVITY: 1.270-1.290	
	wire circuit	Wire conn-ecting Loose or cracked			○	○	○	○	○		

Check item			Checking period							Judgement standard	Remark
			Gen-eral che-cking	First Month Or Initial 500km			Office				
					Months Or 5000km	months or 1000km	Per1 Months Or 1000km	per3 months or 2500km	per12 months or 10000km		
Engine	Engine parts	Performance, noise			○	○	○	○	○		
		Low speed, Acceleration			○	○	○	○	○	Idling: 1900±100rpm 1700±100rpm	2T 4T
		Exhaust	○		○	○	○	○	○		Check the clolr Or exhausting -air
		Air cleaner			○	○	○	○	○		
		Cylinder, cyl-inder head inlet Pipe, locking Condition							○	Locking torque Cylinder head: (cold) 1.0-1.4kg/m inlet pipe⊗cp;d) 1.0-1.2kg/m	
		Compression pressure				○			○	Using starting Motor. 6kg/c ㎡(600rpm) 7kg/c ㎡(500rpm) 11kg/c ㎡(700rpm)	50 CC 110 CC 150CC
	Lubr-icat-Ion Syst-em	Oil leakage			○	○	○	○	○		
		Oil quantity, Dirty			○	○	○	○	○	Fill when-ever oil light is on	
		Oil quantity,	○	○							
		Oil filter			○	○		○	○	Change every 5000km	Clean the cooler
	fuel syst-em	Fuel quantity	○								
		Fuel leakage			○	○	○	○	○		
		Carburetor Parts dirty			○	○	○	○	○		
		Carburetor thr-ottle and choke Performance			○	○	○	○	○		
		Carburetor Float height			○	○	○	○	○		
		Carburetor Adjustment			○	○	○	○	○		
		Fuel pipe Changing								※per 4 years	

Check item		Checking period							Judgement standard	Remark
		General checking	First Month Or Initial 500km	Months Or 5000km	months or 1000km	Office Per1 Months Or 1000km	per3 months or 2500km	per12 months or 10000km		
Lamp system	Performance	○		○	○	○	○	○		
	Dirty, cracked	○		○	○	○	○	○		
Horn turn Signal Reflector	Performance	○		○	○	○	○	○		Horn Turn signal
lock	Performance			○	○	○	○	○		
Rear view mirror	Check the illumination	○		○	○	○	○	○		
Blinker linc-Nese plate nu-Mber&mark	Dirty cracked	○								
Instrument board	performance	○		○	○	○	○	○		
Muffler silencer	Ass'y part Loose cracked			○	○	○	○	○		
	performance				○		○	○		
chassis	loose or cracked				○		○	○		
The earlier Abnormal condition	**Confirm it does Not happen again**	○								
others	Chassis Lubrication			○	○	○	○	○		
	Decoking mixer ,muffler, silencer				○			○		

FRONT BRAKE INSPECTION AND ADJUSTMENT

● Proper brake lever free play can avoid brake dragging.

1. Front brake inspection
   Apply the front brake lever.

Check
● If the arrowhead on the front brake overlaps with the flange on the brake hub cover, replace the front brake shoe.

● To replace the brake shoe, replace the left and right brake shoes at the same time.

2. Front brake adjustment

● Before adjusting the front brake. Check the brake shoe first.

Check:
Front brake lever free play
Not as specified➔adjust
Front brake lever free only : 10~20mm.

(2) Adjustment
● Properly turn the adjusting nuts until the free play is as specified.

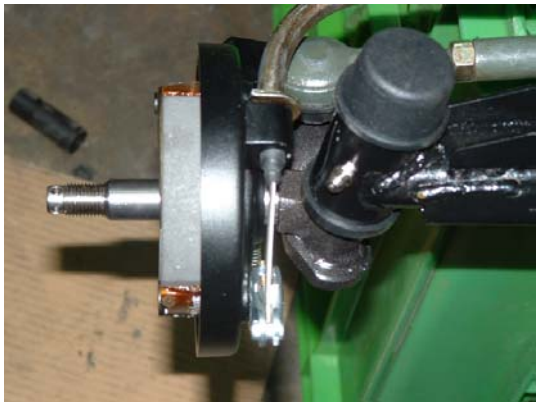
● To adjust the front brake, adjust the left and right wheels at the same time.
● After adjusting, apply the front brake lever to check the left and right wheels for braking simultaneously. Otherwise adjust again.

REAR BRAKE INSPECTION AND ADJUSTMENT

1. Check

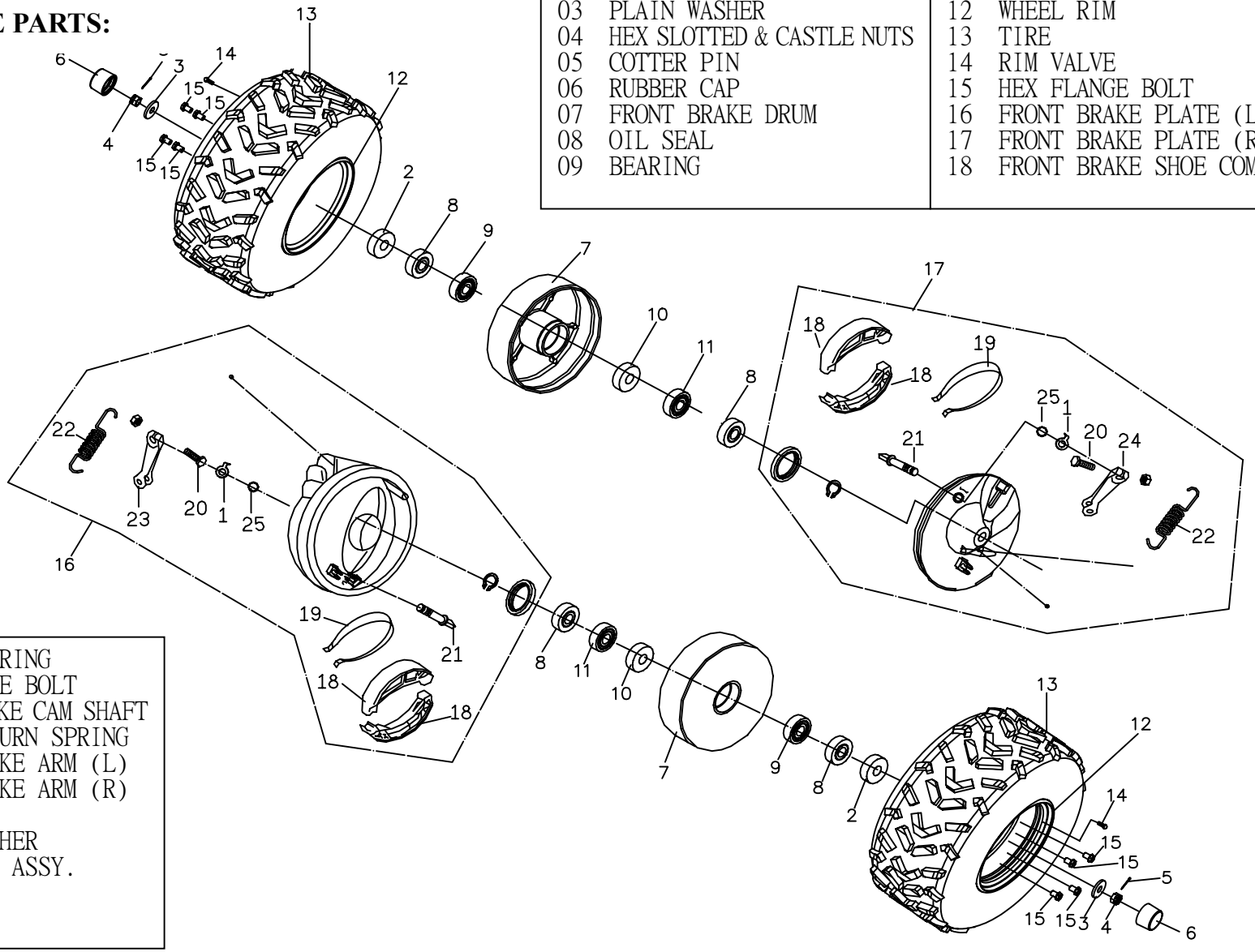
(1) Brake disc
   Worn/damaged➔replace
   Not as specified➔replace
   Min. Thickness limit : 3.0mm

brake inspection:



FRONT WHEEL

EXPLOSIVE PARTS:



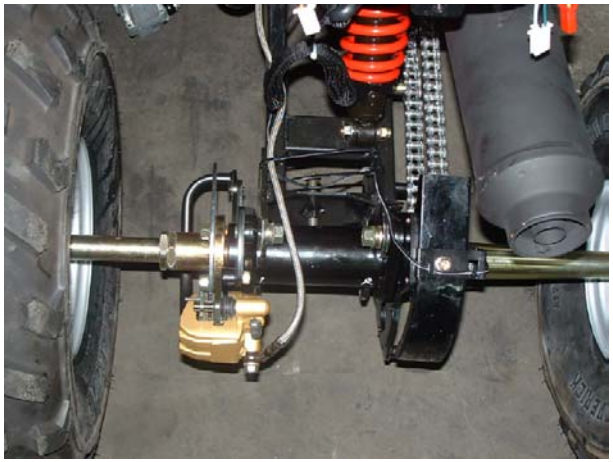
01	FRT BRAKE CABLE COMP.	10	INNER SPACER
02	OUTER SPACER	11	BEARING
03	PLAIN WASHER	12	WHEEL RIM
04	HEX SLOTTED & CASTLE NUTS	13	TIRE
05	COTTER PIN	14	RIM VALVE
06	RUBBER CAP	15	HEX FLANGE BOLT
07	FRONT BRAKE DRUM	16	FRONT BRAKE PLATE (L)
08	OIL SEAL	17	FRONT BRAKE PLATE (R)
09	BEARING	18	FRONT BRAKE SHOE COMPLETE

19	STRAIN SPRING
20	HEX FLANGE BOLT
21	FRONT BRAKE CAM SHAFT
22	FRONT RETURN SPRING
23	FRONT BRAKE ARM (L)
24	FRONT BRAKE ARM (R)
25	O RING
26	PLAIN WASHER
27	FRONT HUB ASSY.

Rear brake inspection:

1. Remove the rear brake system

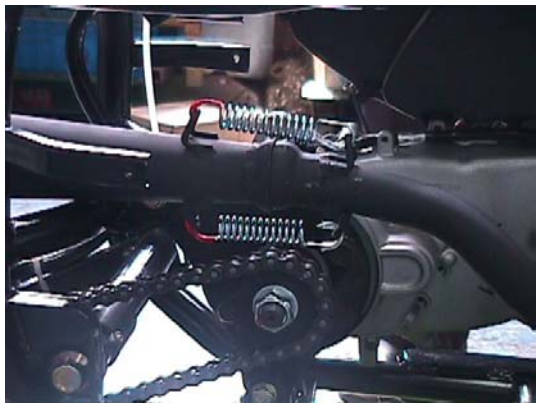
- Remove the left rear wheel
- Remove the axle collar
- Remove the rear brake caliper
- Remove the brake disc



NOTE: KEEP THE BRAKE PADS AWAY FROM THE GREASE

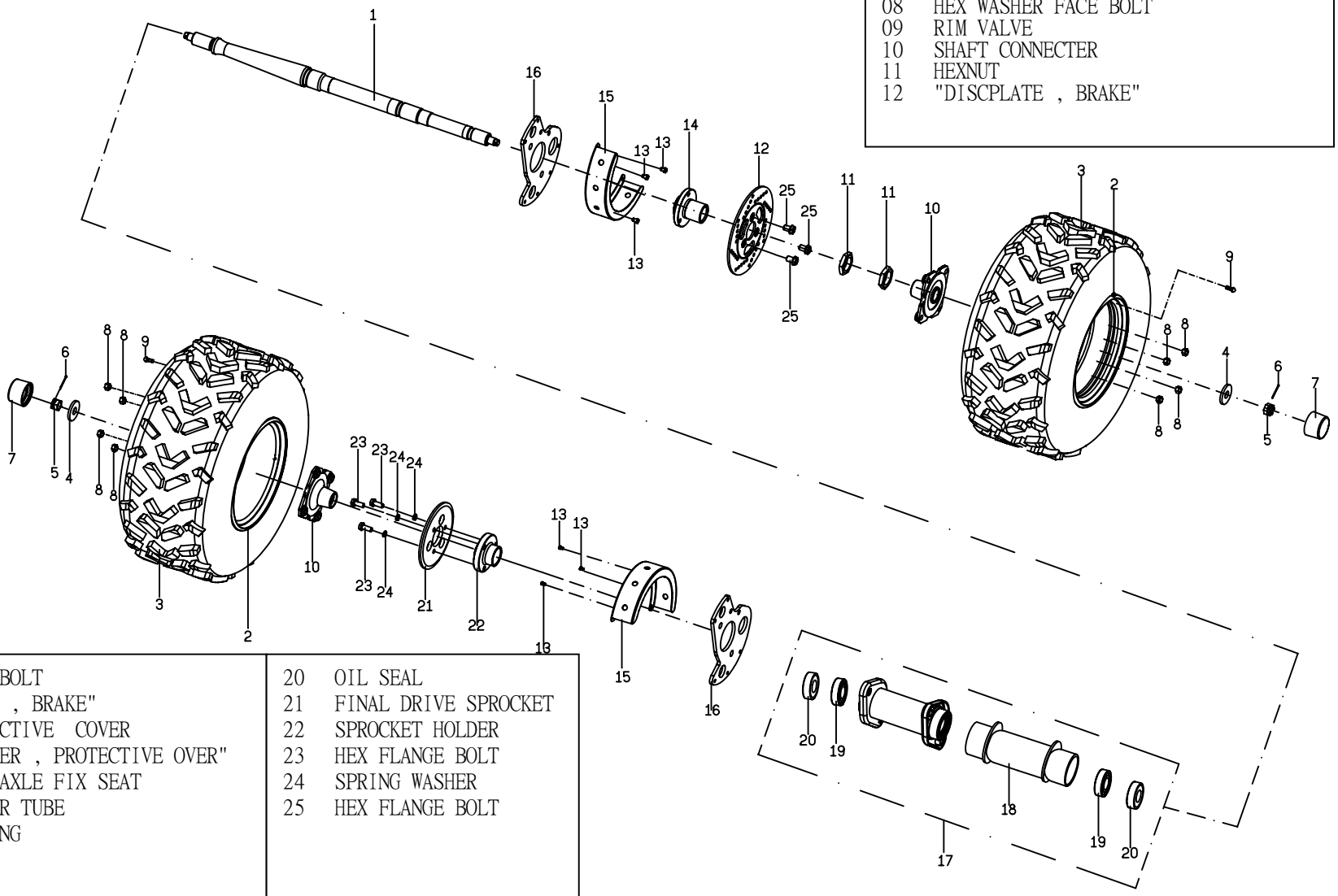
2. Brake disc holder inspection

- Remove the right rear wheel
- Remove the nut of front driving sprocket.
- Remove the disc holder



REAR WHEEL
EXPLOSIVE PARTS:

01	REAR AXLE
02	WHEEL RIM
03	TIRE
04	PLAIN WASHER
05	HEXAGON SLOTTED&CASTLE NUTS
06	COTTER PIN
07	RUBBER CAP
08	HEX WASHER FACE BOLT
09	RIM VALVE
10	SHAFT CONNECTER
11	HEXNUT
12	"DISCPLATE , BRAKE"

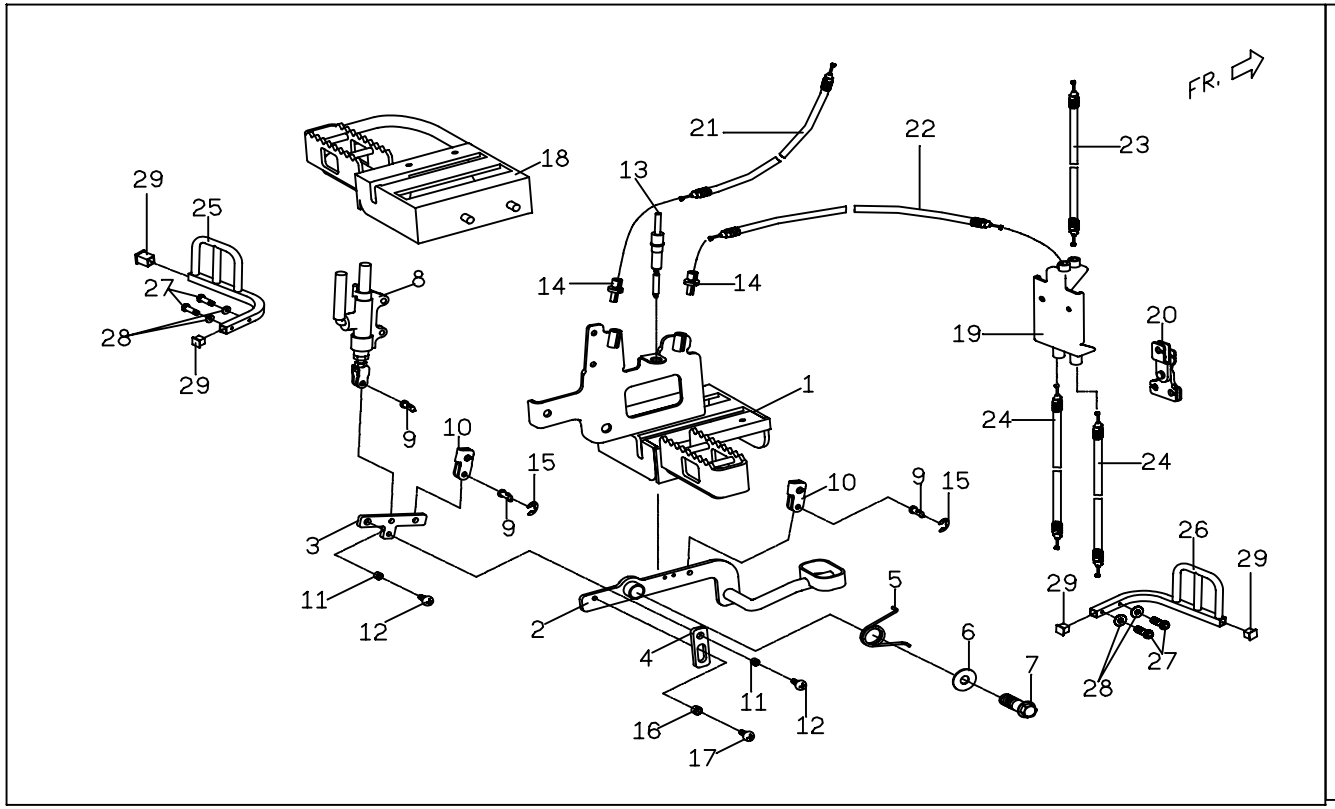


13	HEX BOLT
14	"BASE , BRAKE"
15	PROTECTIVE COVER
16	"HOLDER , PROTECTIVE OVER"
17	REAR AXLE FIX SEAT
18	SPACER TUBE
19	BEARING

20	OIL SEAL
21	FINAL DRIVE SPROCKET
22	SPROCKET HOLDER
23	HEX FLANGE BOLT
24	SPRING WASHER
25	HEX FLANGE BOLT

Foot brake inspection: (Option)

- Adjust the front & rear brake screws to make the foot brake balance, avoiding brake unevenly.
- Make sure there is enough brake fluid in the reserver.



1	RIGHT STEP FLOOR ASSY.
2	KICK BRAKE
3	"LEVER, REAR BRAKE PUMP"
4	"LEVER, KICK BRAKE"
5	KICK BRAKE SPRING
6	KICK BRAKE BUSH
7	HEXAGON FLANGE BOLT
8	REAR BRAKE MASTER CYLINDER
9	"LOCK PIN, BRAKE MASTER CYL."
10	CABLE CONNECTING PLATE
11	"BUSH, REAR BRAKE PUMP LEVER"
12	RD. HEAD MACHINE SCREW
13	SAFETY SWITCH
14	CABLE ADJUSTING BOLT ASSY.
15	E TYPE CLIP
16	"BUSH, KICK BRAKE LEVER"
17	RD. HEAD MACHINE SCREW
18	LEFT STEP FLOOR ASSY.
19	FRT BRAKE CABLE BRACKET
20	"SLIDE, FRT BRAKE CABLE"
21	REAR BRAKE CABLE COMP.
22	FRT BRAKE CABLE COMP. 3
23	FRT BRAKE CABLE COMP. 1
24	FRT BRAKE CABLE COMP. 2

3. FRONT & REAR SHOCK ABSORBERS INSPECTION AND ADJUSTMENT

1. Check the front shock absorbers

●Movement

Raise and drop the handlebar up and down several times.

If the movement has trouble or leaks, check.

Refer to VEHICLE BODY.

2. Rear shock absorber inspection

●Movement

Press the handlebar and seat, and shake up and down several times.

If the rear shock absorber has trouble or leaks, check.

Refer to VEHICLE BODY.

STEERING MECHANISM INSPECTION AND ADJUSTMENT

1. Place the ATV on a level surface.
2. Support the vehicle body with a work stand to raise the front wheel Off the ground.

3. Check for

(1) Slack

Hold the handlebar and front wheel with your both hands, and shake left and right.

If slack, tighten the lock nuts of steering shaft, handlebar clamp, and ball joint arm.

Torque:

Steering shaft lock nut: 4.0~5.0 kg•m

Steering shaft holder lock nut: 2.0~3.0 kg•m

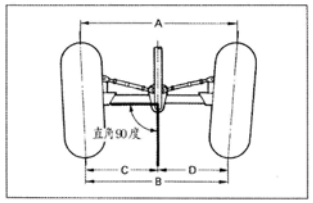
Handlebar clamp lock nut: 0.8~1.0 kg•m

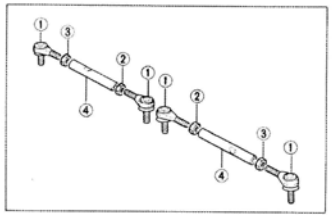
Ball joint arm lock nut:3.0~4.0 kg•M

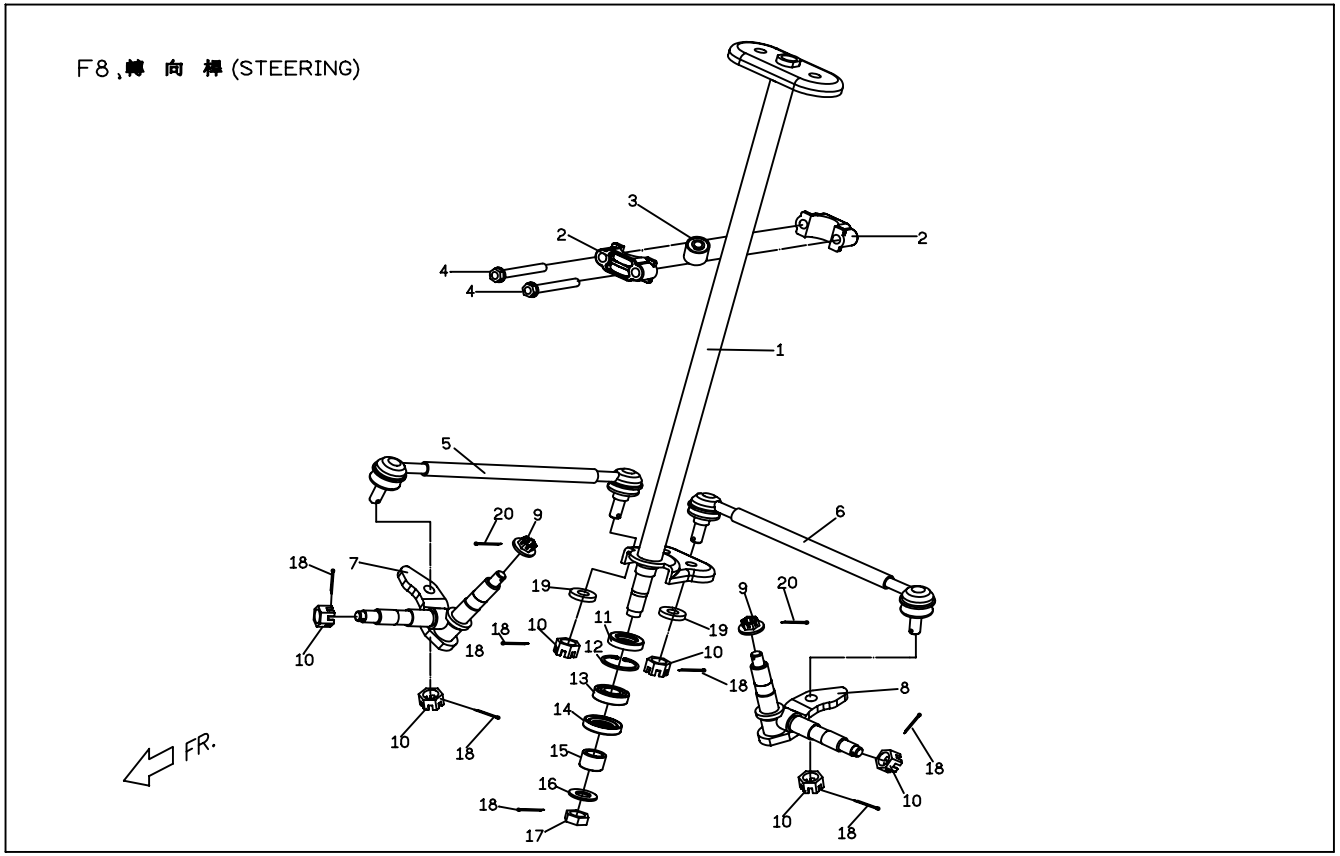
(2) Turn the handlebar left and right. If it is hard to move, remove the steering shaft assembly. Check the sleeve and lubricate the joint parts of steering mechanism.

Steering Tie inspection & adjustment

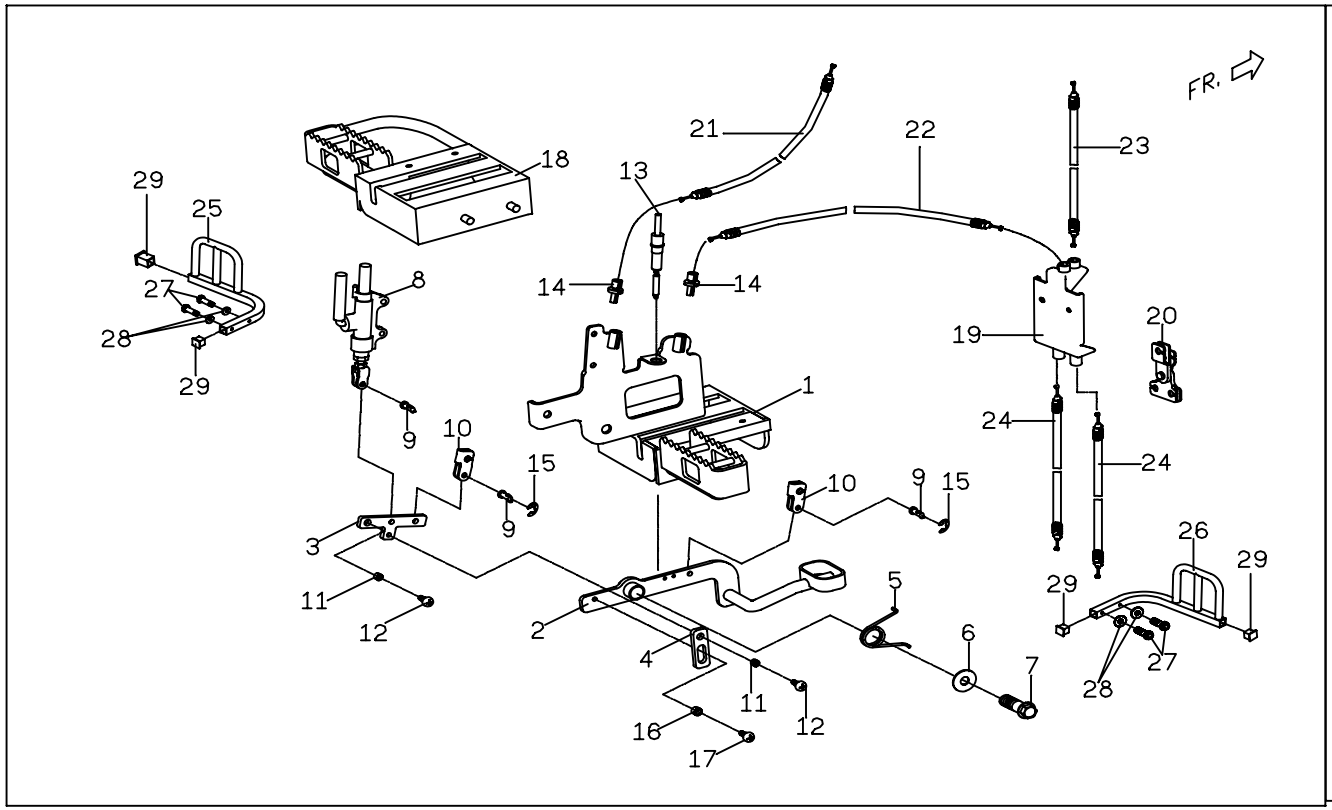
1. Keep the vehicle in flat surface, turn the front
2. Wheel to forward parallel.
3. Make sure length C equals D by eyes.
4. Otherwise adjust the steering tie,
   - Loosen nut #2 & #3.(#2 is left thread)
   - Turn #4 to adjust the LH & RH tie length.







01	STEERING SHAFT
02	STEERING SHAFT BRACKET
03	STEERING SHAFT BUSH SLEEVE
04	HEX WASHER FACE BOLT
05	STEERING TIE-ROD ASSEMBLY(R)
06	STEERING TIE-ROD ASSEMBLY(L)
07	KNUCKLE (R)
08	KNUCKLE (L)
09	INSERT LOCK NUT
10	HEX SLOTTED AND CASTLE NUTS
11	OIL SEAL
12	CIRCLIP
13	RADIAL BALL BEARING
14	OIL SEAL
15	INNER SPACER
16	PLAIN WASHER
17	INSERT LOCK NUT
18	COTTER PIN
19	PLAIN WASHER
20	COTTER PIN



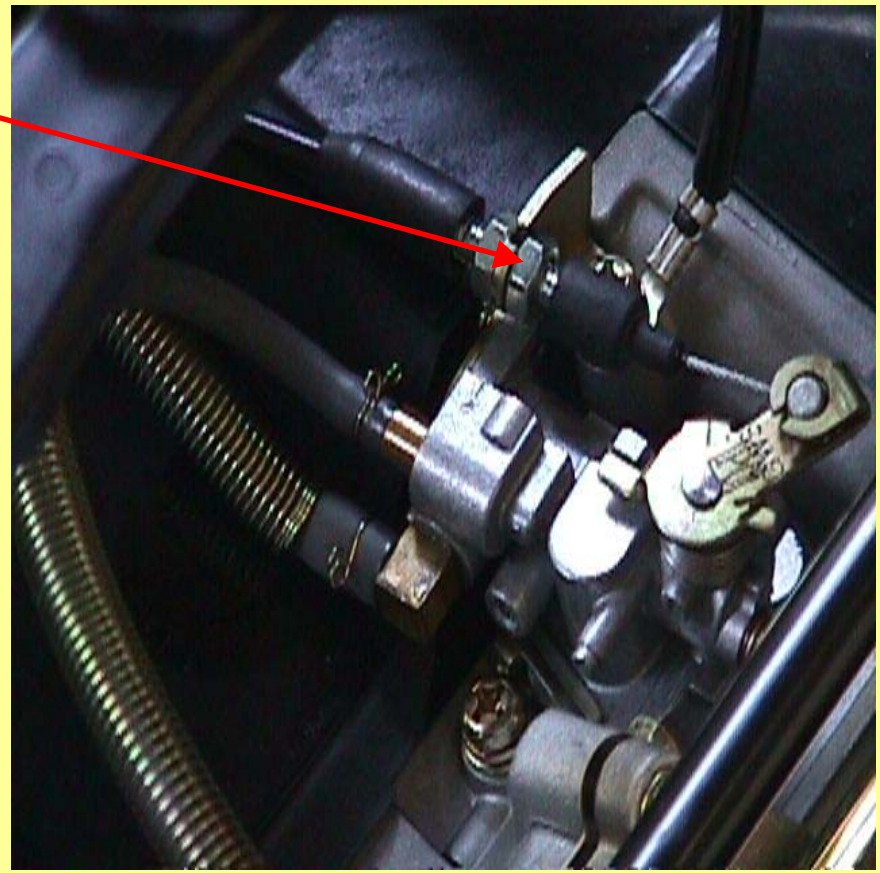
1	RIGHT STEP FLOOR ASSY.
2	KICK BRAKE
3	"LEVER, REAR BRAKE PUMP"
4	"LEVER, KICK BRAKE"
5	KICK BRAKE SPRING
6	KICK BRAKE BUSH
7	HEXAGON FLANGE BOLT
8	REAR BRAKE MASTER CYLINDER
9	"LOCK PIN, BRAKE MASTER CYL."
10	CABLE CONNECTING PLATE
11	"BUSH, REAR BRAKE PUMP LEVER"
12	RD. HEAD MACHINE SCREW
13	SAFETY SWITCH
14	CABLE ADJUSTING BOLT ASSY.
15	E TYPE CLIP
16	"BUSH, KICK BRAKE LEVER"
17	RD. HEAD MACHINE SCREW
18	LEFT STEP FLOOR ASSY.
19	FRT BRAKE CABLE BRACKET
20	"SLIDE, FRT BRAKE CABLE"
21	REAR BRAKE CABLE COMP.
22	FRT BRAKE CABLE COMP. 3
23	FRT BRAKE CABLE COMP. 1
24	FRT BRAKE CABLE COMP. 2

ENGINE DISASSEMBLY(1)

- Loosen engine from
- frame.

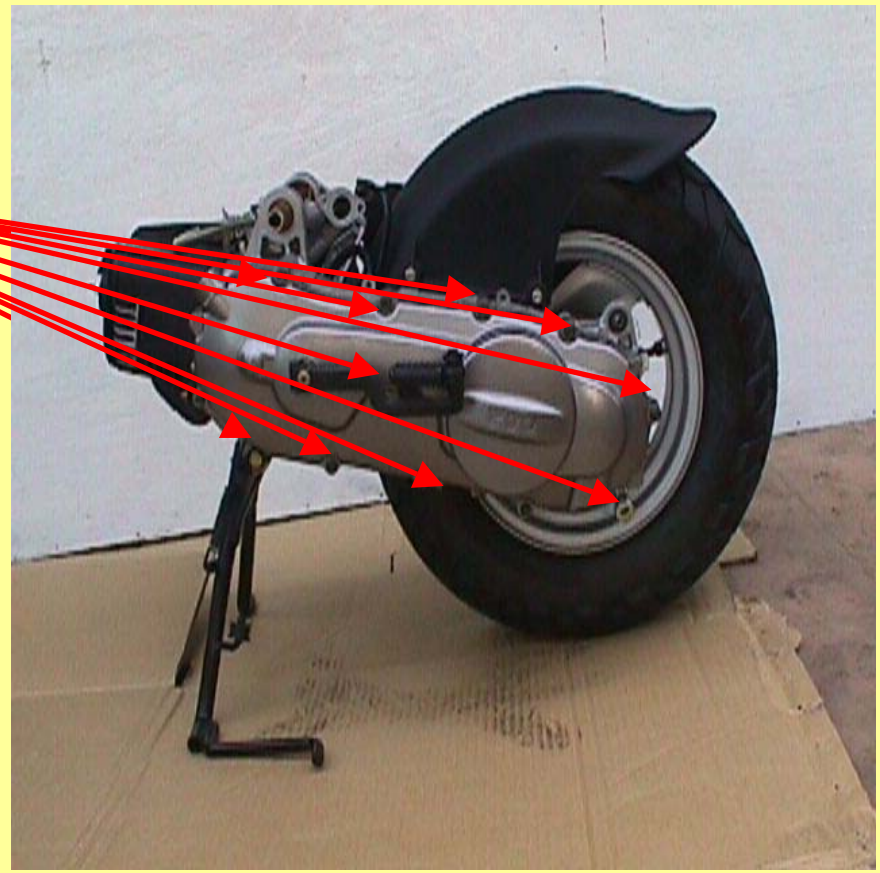
ENGINE DISASSEMBLY(2)

- Loosen nut
- Remove throttle cable



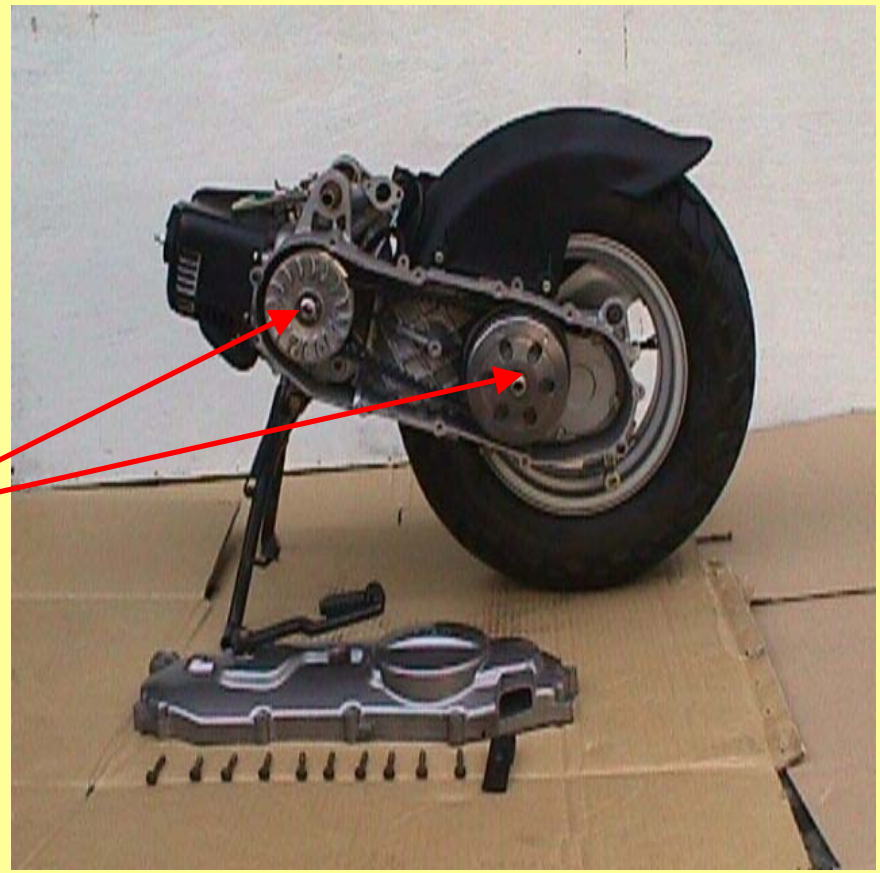
TRANSMISSION DISASSEMBLY(1)

- Loosen 10 hexagon flange screws



TRANSMISSION DISASSEMBLY(1)

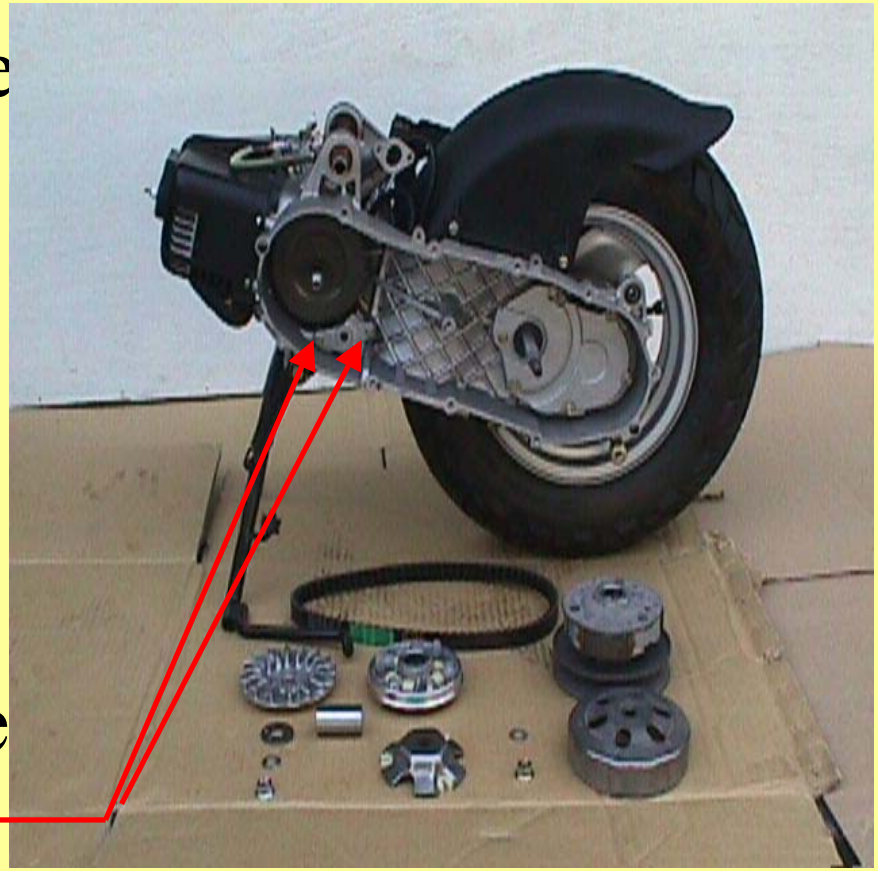
- Dismantle engine LH cover
- Loosen 2 nuts of driving face & clutch outer



TRANSMISSION DISASSEMBLY(3)

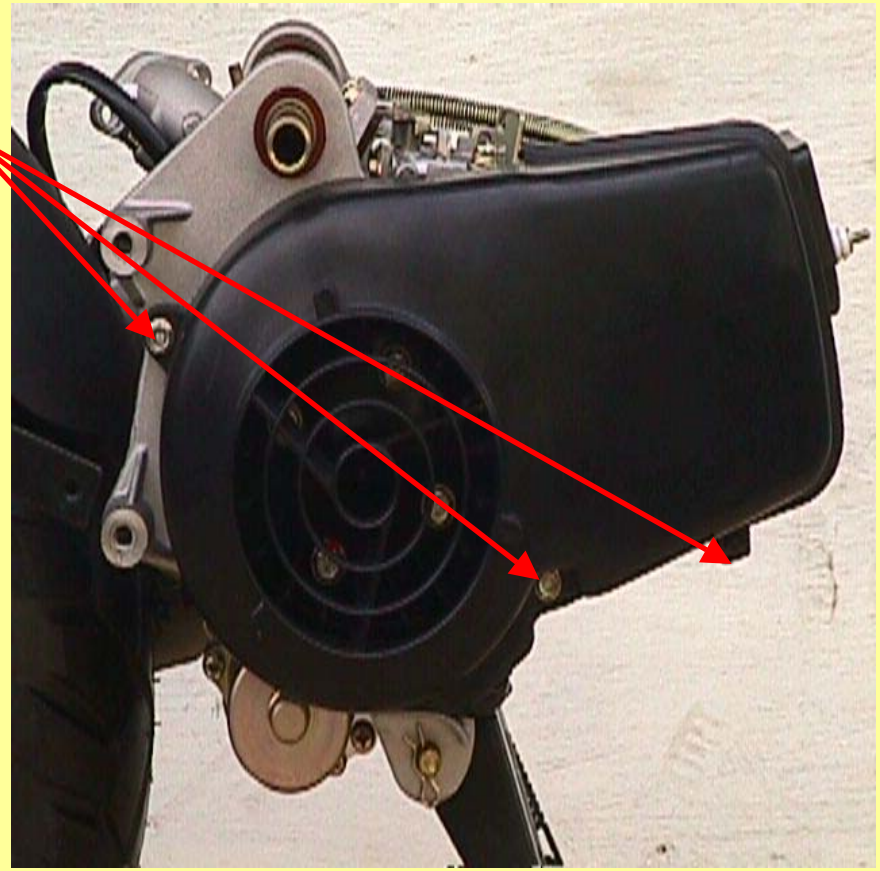
- Remove driving face driving pulley,

  v-belt, clutch outer, driven pulley
- Loosen 2 hexagon screws of starting idle gear fixing plate



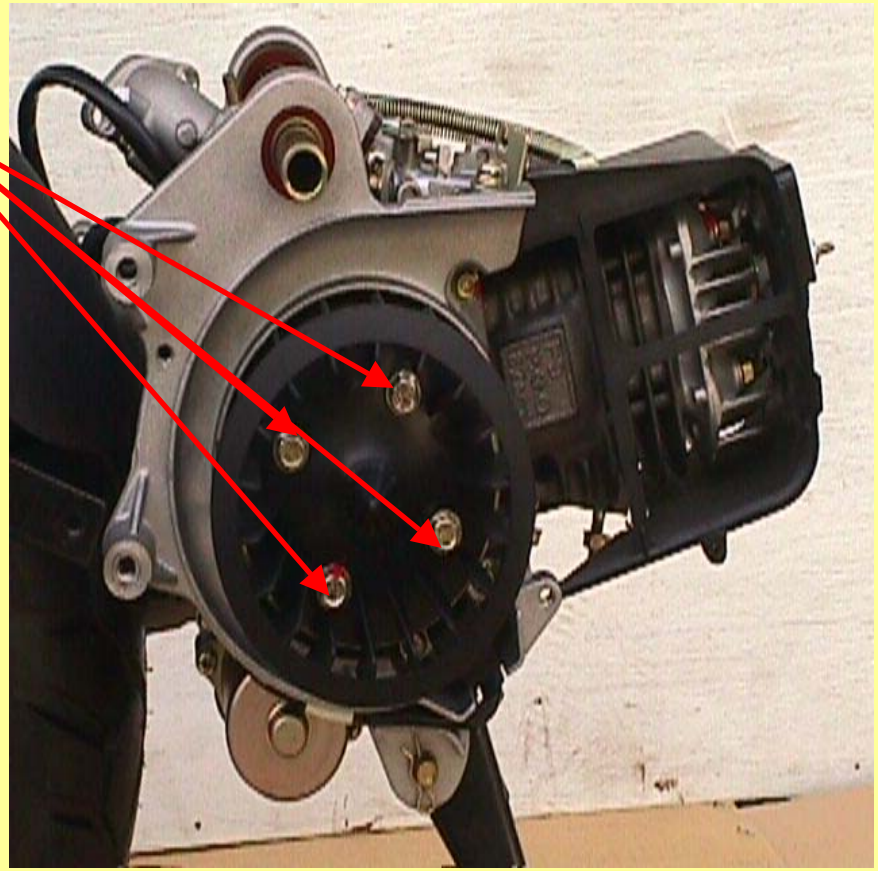
MAGNETO DISASSEMBLY(1)

- Loosen 3 screws
- Remove cooling fan cover



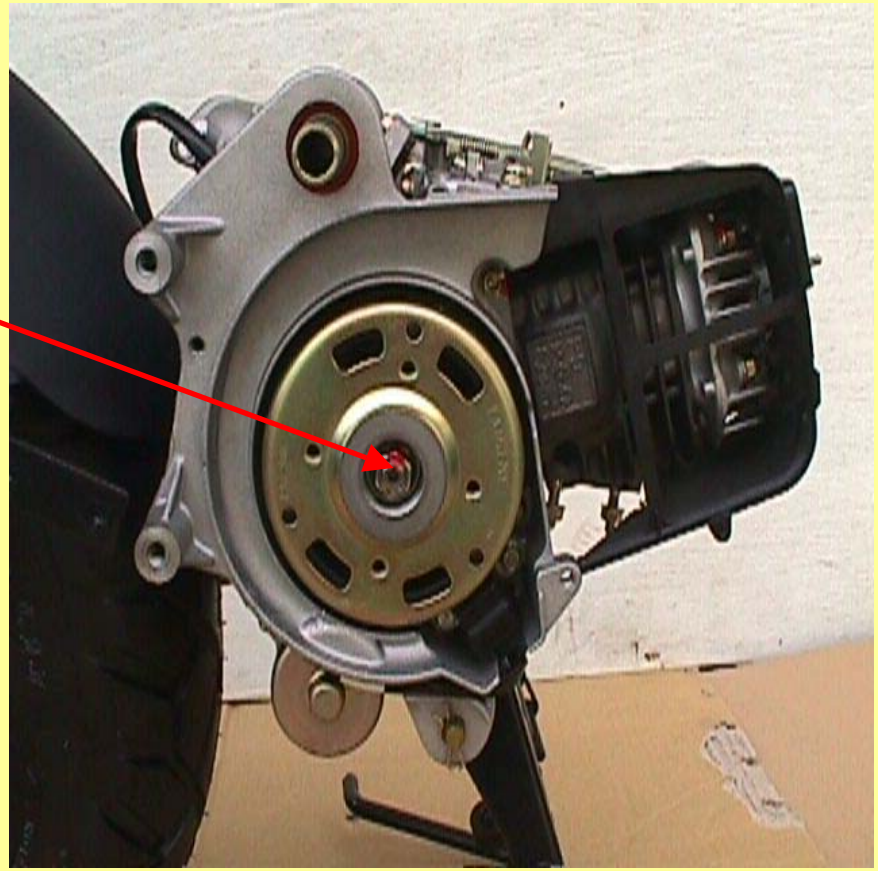
MAGNETO DISASSEMBLY(2)

- Loosen 4 hexagon screws
- Remove cooling fan



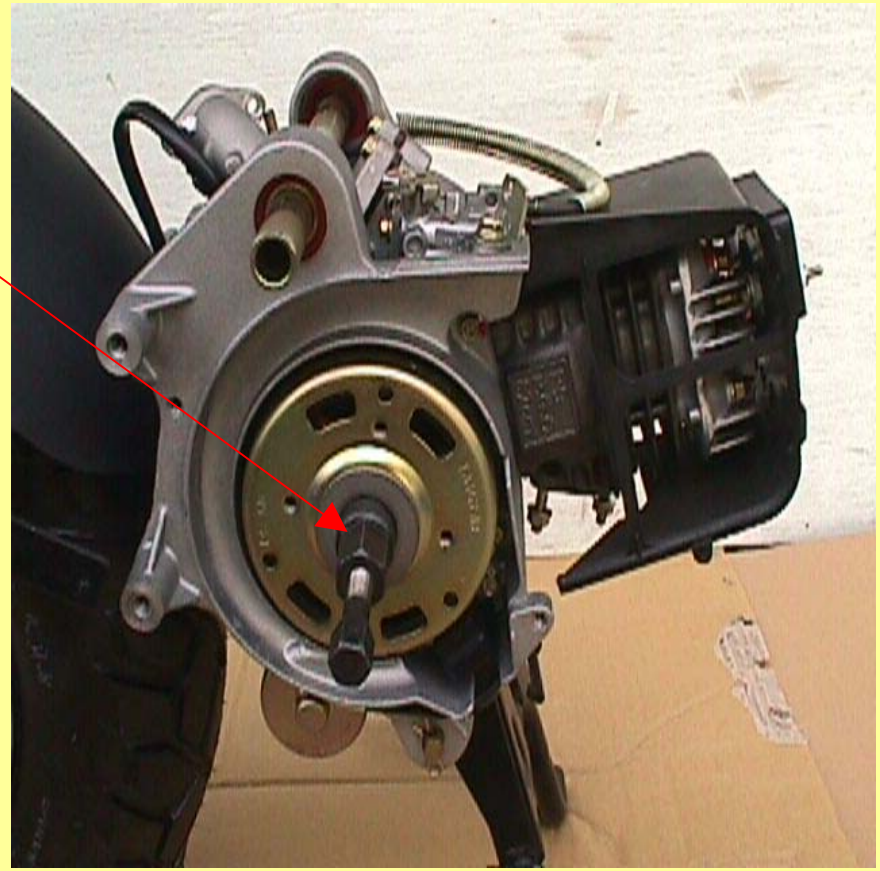
MAGNETO DISASSEMBLY(3)

- Loosen nut of magneto



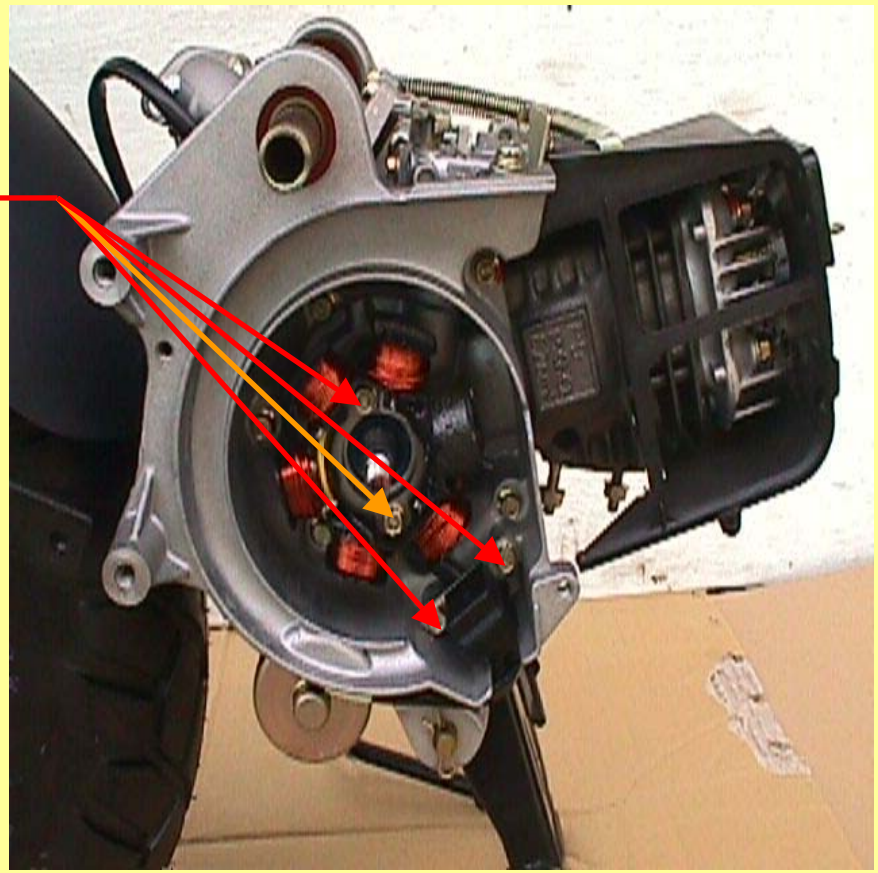
MAGNETO DISASSEMBLY(4)

- Pull out magneto with tool (no:S620270G014)
- ☆Tighten tool to prevent magneto thread worse



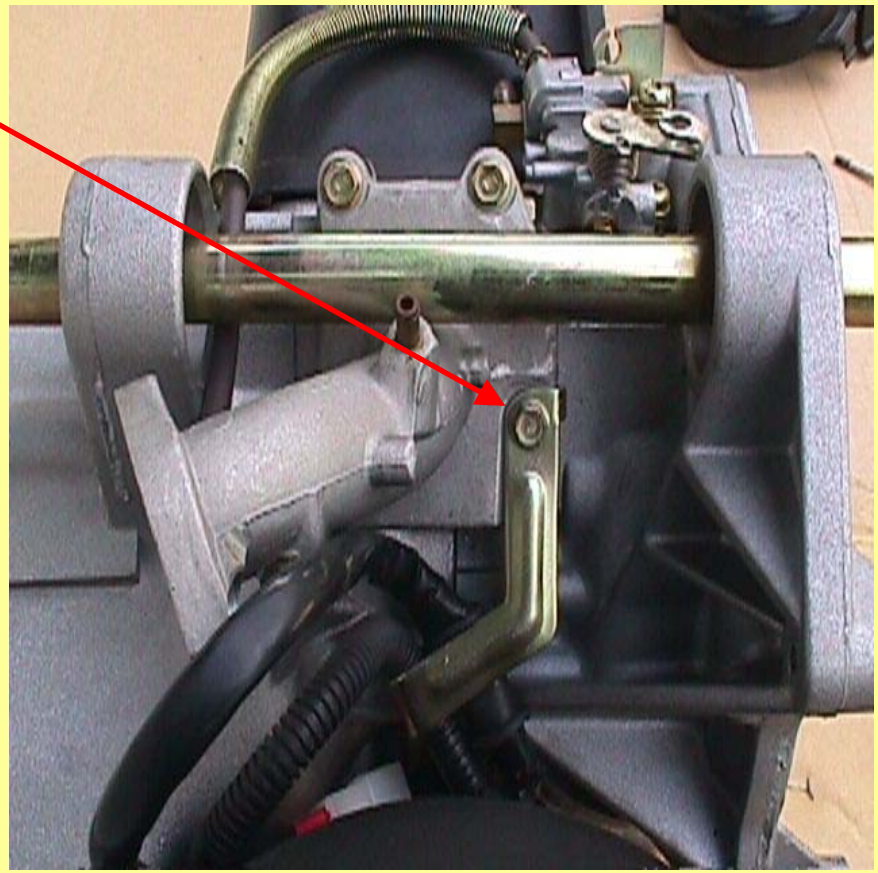
MAGNETO DISASSEMBLY(5)

- Loosen 4 hexagon screws of stator



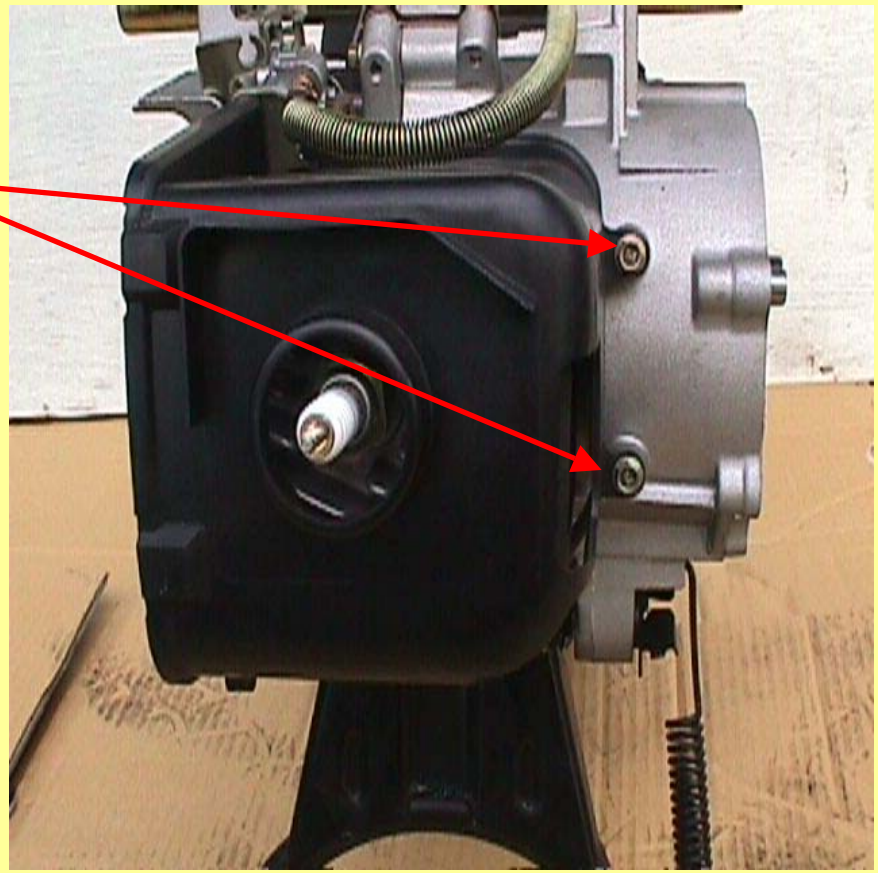
MAGNETO DISASSEMBLY(6)

- Loosen 1 wire fixing plate screw
- Remove wire fixing plate and stator



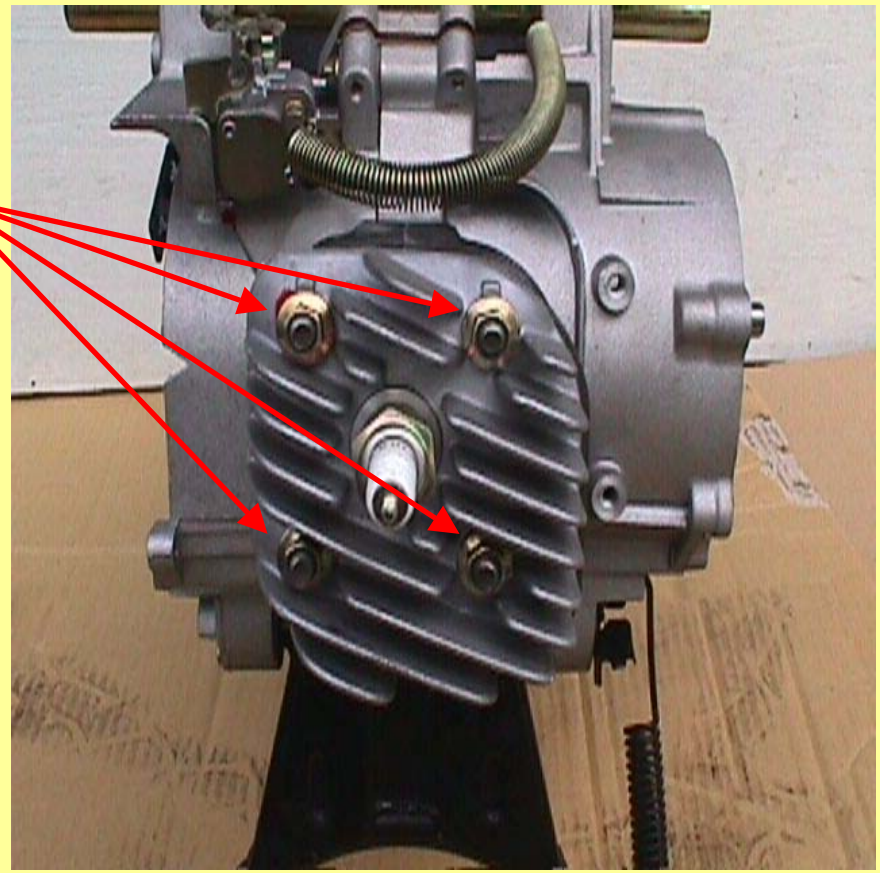
CYLINDER HEAD & CYLINDER DISASSEMBLY(1)

- Loosen 2 hexagon screws
- Remove cooling cover



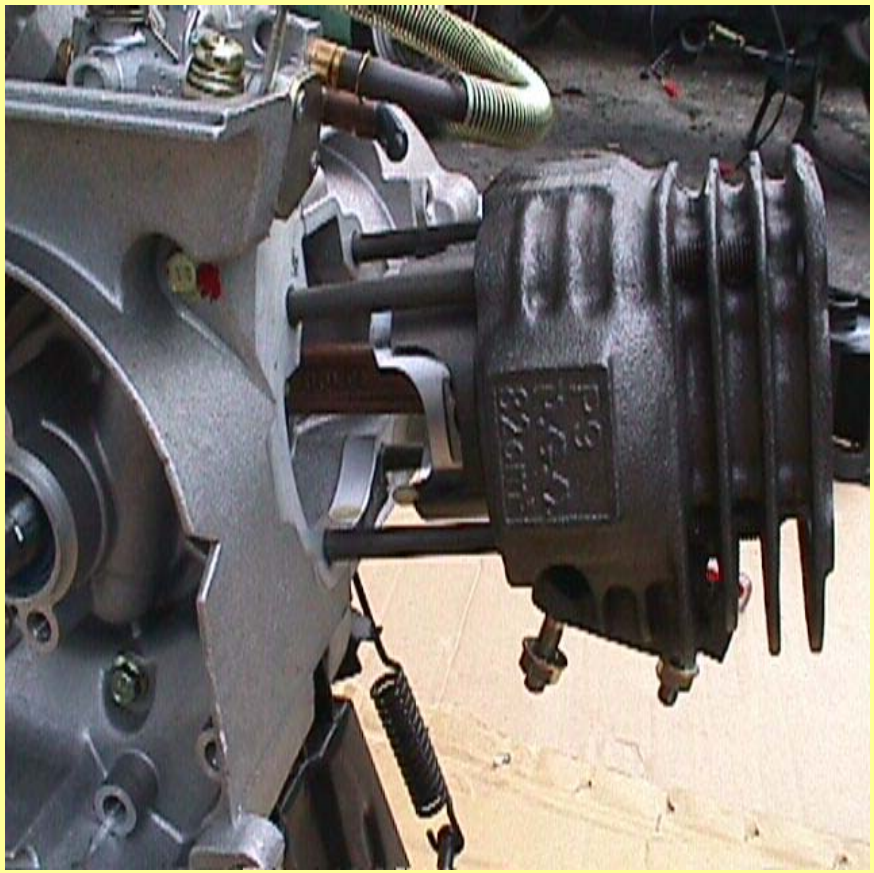
CYLINDER HEAD & CYLINDER DISASSEMBLY(2)

- Loosen 4 nuts of cylinder
- Remove cylinder head



CYLINDER HEAD & CYLINDER DISASSEMBLY(3)

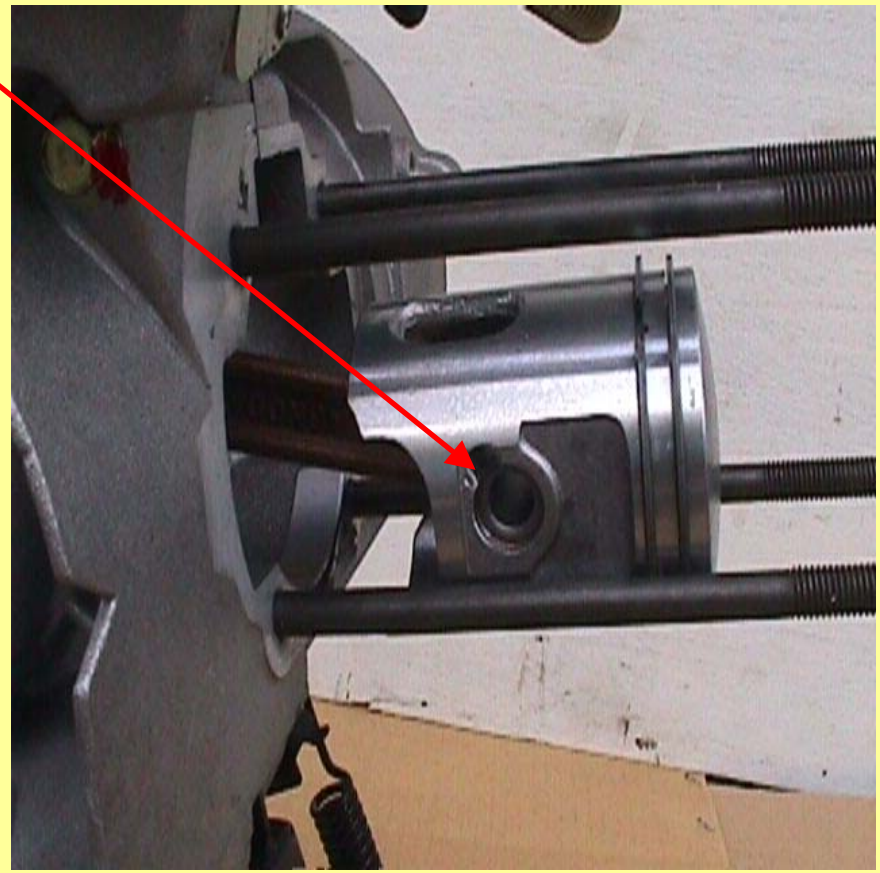
- Remove cylinder



CYLINDER HEAD & CYLINDER DISASSEMBLY(4)

- Remove piston pin clip
- Remove piston pin/piston/bearing

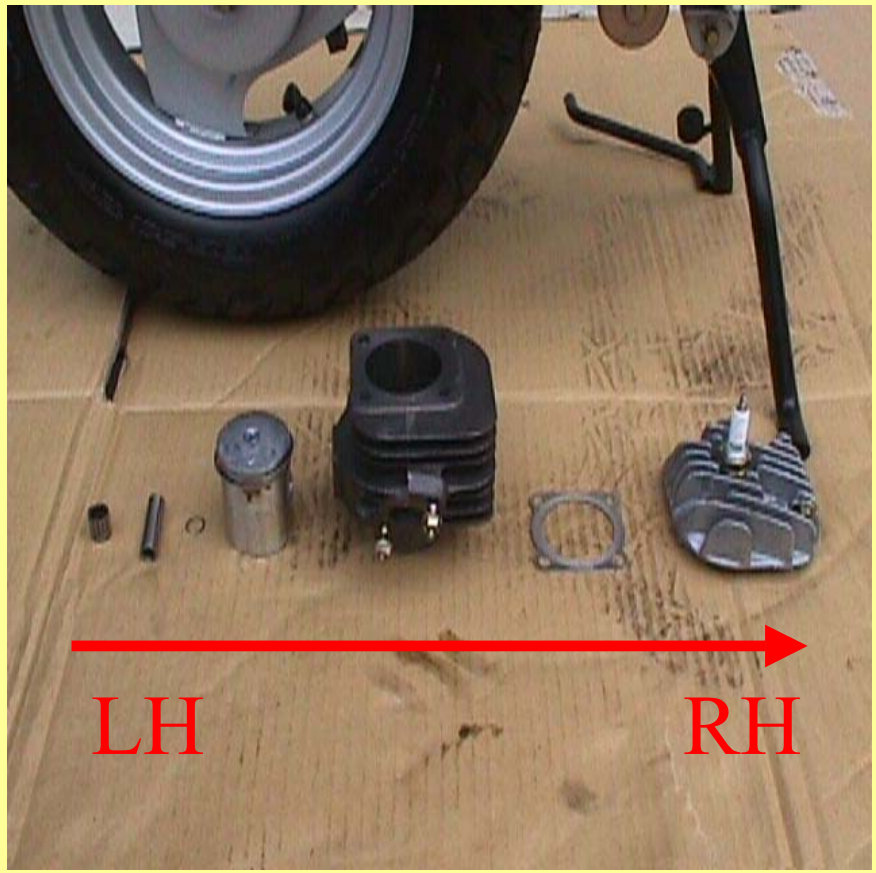
☆ The piston pin clip shall not overlap the opening with piston



CYLINDER HEAD & CYLINDER DISASSEMBLY(5)

- Assemble the cylinder head & cylinder from LH to RH

☆ The opening end of piston ring shall be mounted to piston stopper pin, and the mark faces upside



CYLINDER HEAD & CYLINDER DISASSEMBLY(6)

- The arrow mark upon piston shall face to exhaust port

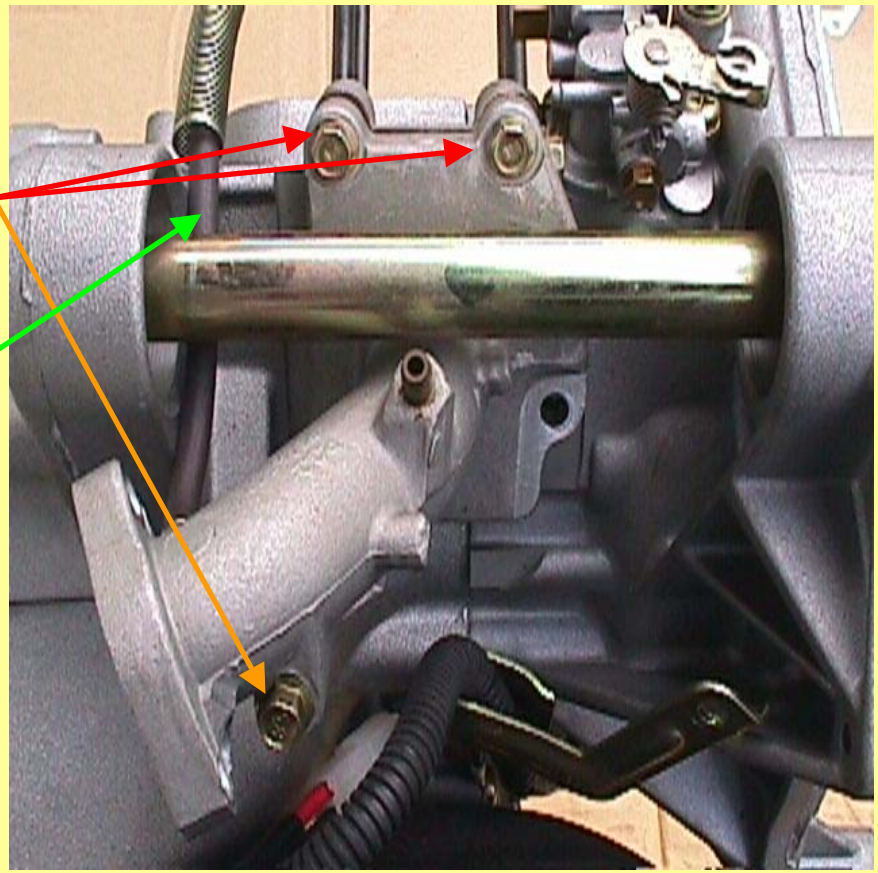
CYLINDER HEAD & CYLINDER DISASSEMBLY(7)

- The ”EX” mark upon cylinder head shall face to exhaust (down)

☆ Tighten nuts crossly and lock torque:1.2kg-m

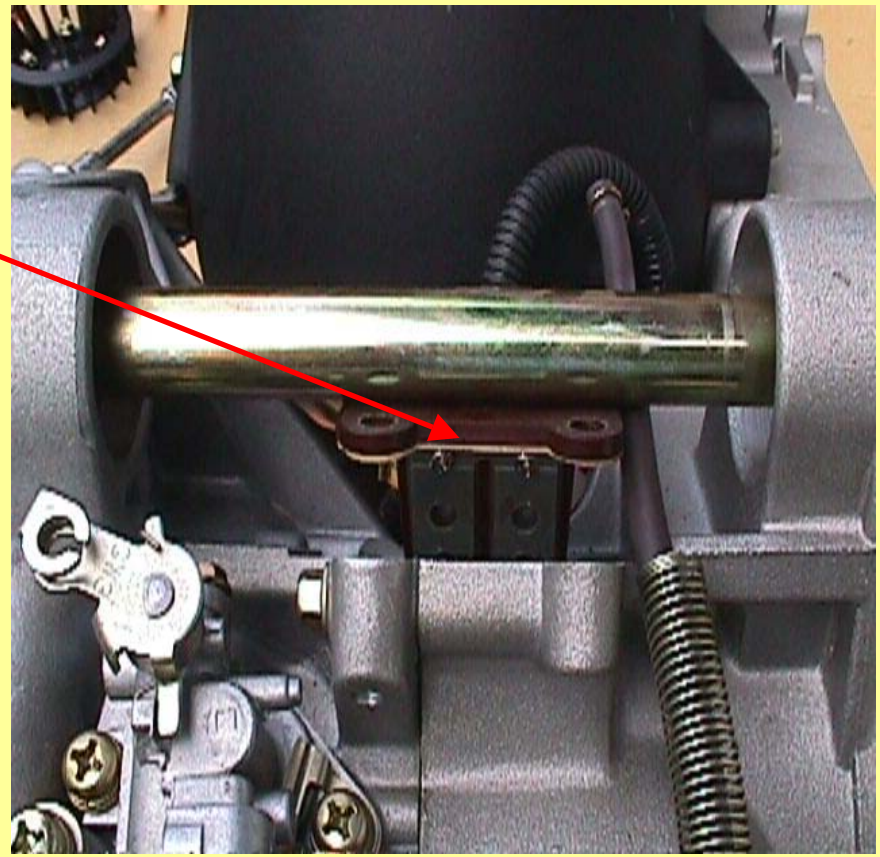
CRANKSHAFT DISASSEMBLY(1)

- Loosen 3 hexagon of intake manifold
- Dismantle oil pipe
- Remove intake manifold



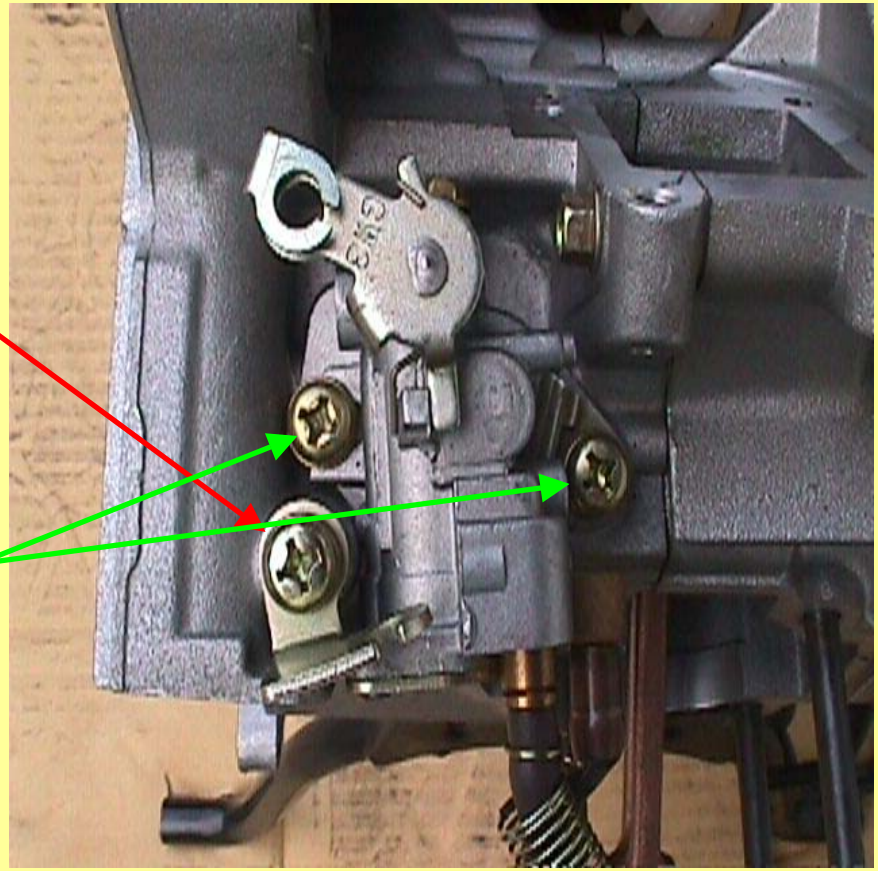
CRANKSHAFT DISASSEMBLY(2)

- Remove reed valve comp.



CRANKSHAFT DISASSEMBLY(3)

- Loosen the screw of cable-fixing plate, remove fixing plate
- Loosen 2 C-R recess pan hd. screws
- Remove oil pump



CRANKSHAFT DISASSEMBLY(4)

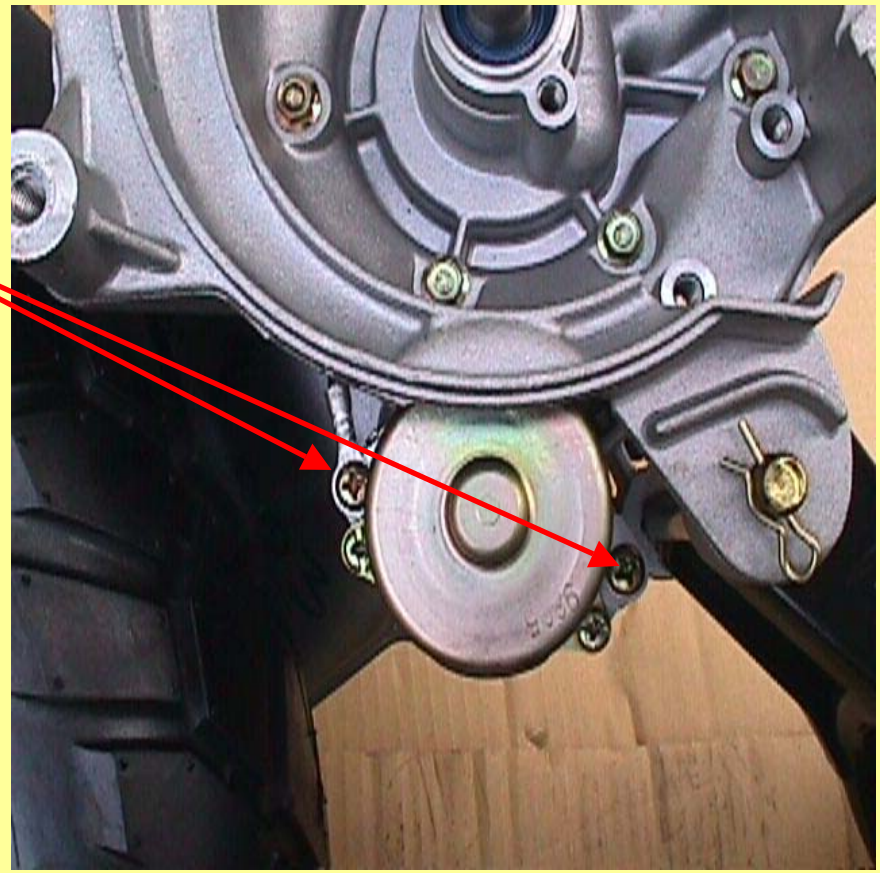
☆Do not miss plain washer when installing oil pump

- The oil inlet & outlet pipe shall be full of oil

(no residual air)

CRANKSHAFT DISASSEMBLY(5)

- Loosen 2 C-R recess pan hd. screws
- Remove starting motor

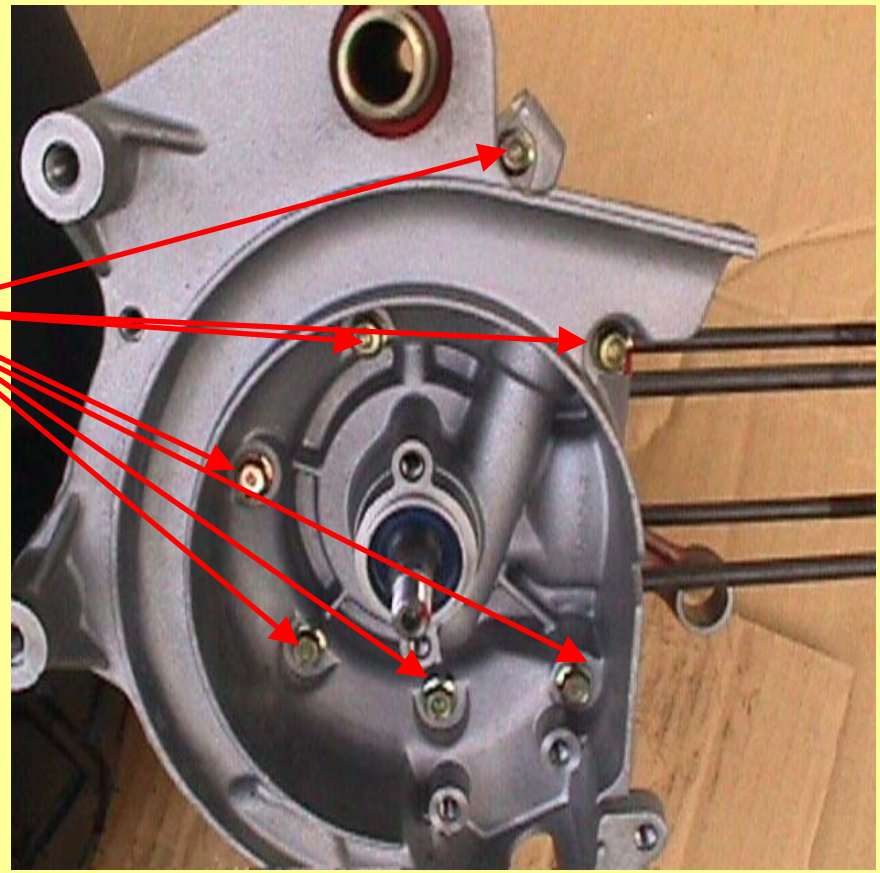


CRANKSHAFT DISASSEMBLY(6)

- Pull out R-clip of central stand axle
- Remove central stand spring
- Remove central stand axle
- Remove central stand

CRANKSHAFT DISASSEMBLY(7)

- Loosen 7 hexagon screws of RH crankcase



CRANKSHAFT DISASSEMBLY(8)

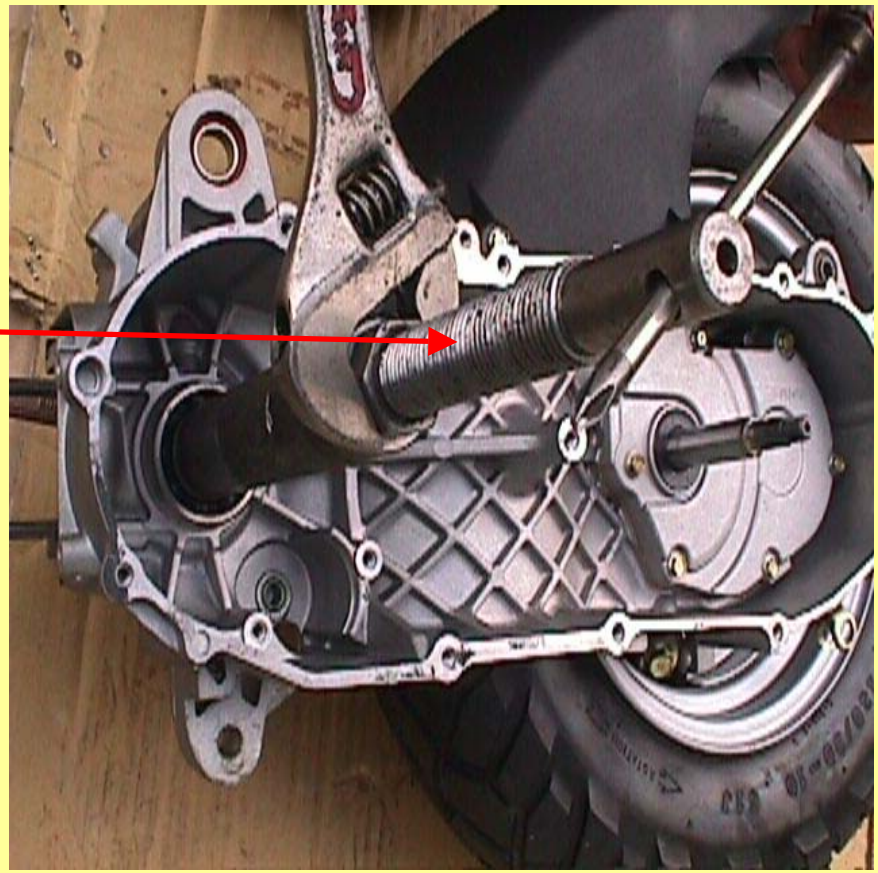
- Pull out RH crankcase from crankshaft with tool

CRANKSHAFT DISASSEMBLY(9)

- Remove crankshaft assy.

CRANKSHAFT INSTALLATION(1)

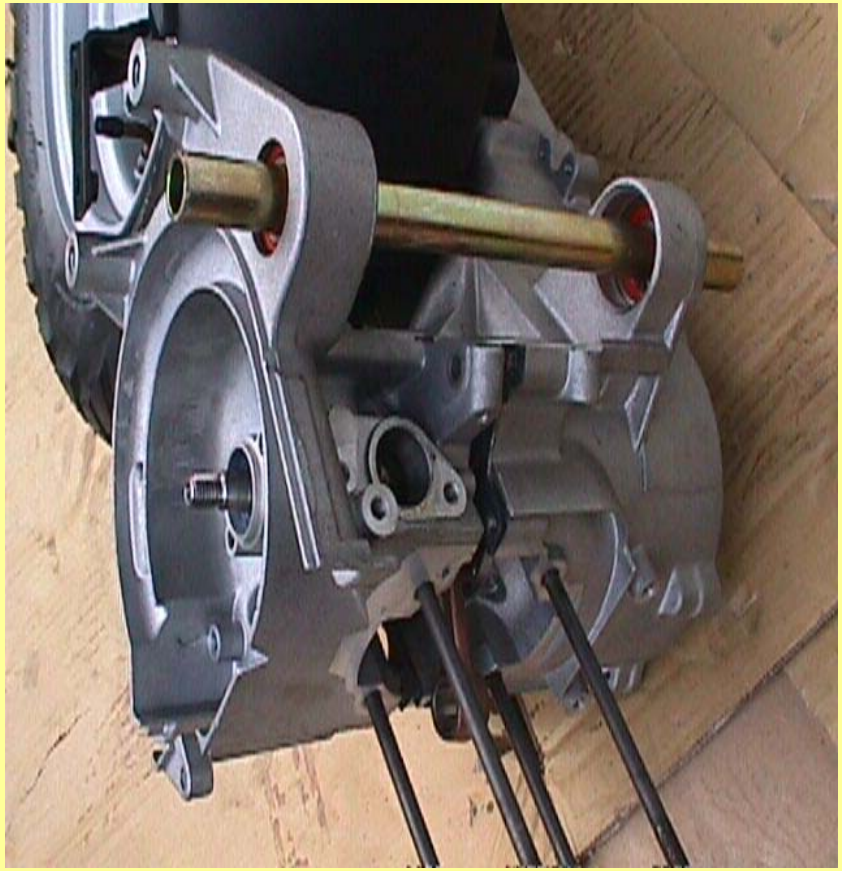
- Pull crankshaft into LH crankcase with tool



CRANKSHAFT INSTALLATION(2)

- Assemble engine hanger axle & RH crankcase
- Tighten hexagon screws of RH crankcase crossly step by step

☆ Replace oil seal and packing

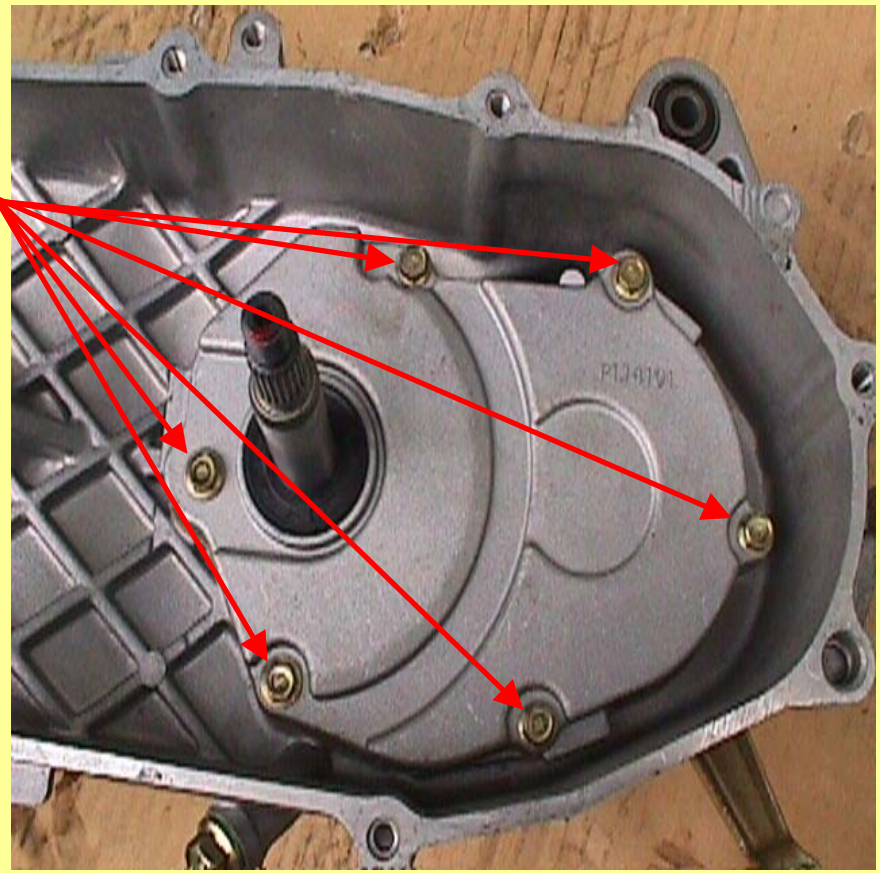


GEAR BOX DISASSEMBLY(1)

- Loosen nut of rear wheel
- Remove rear wheel

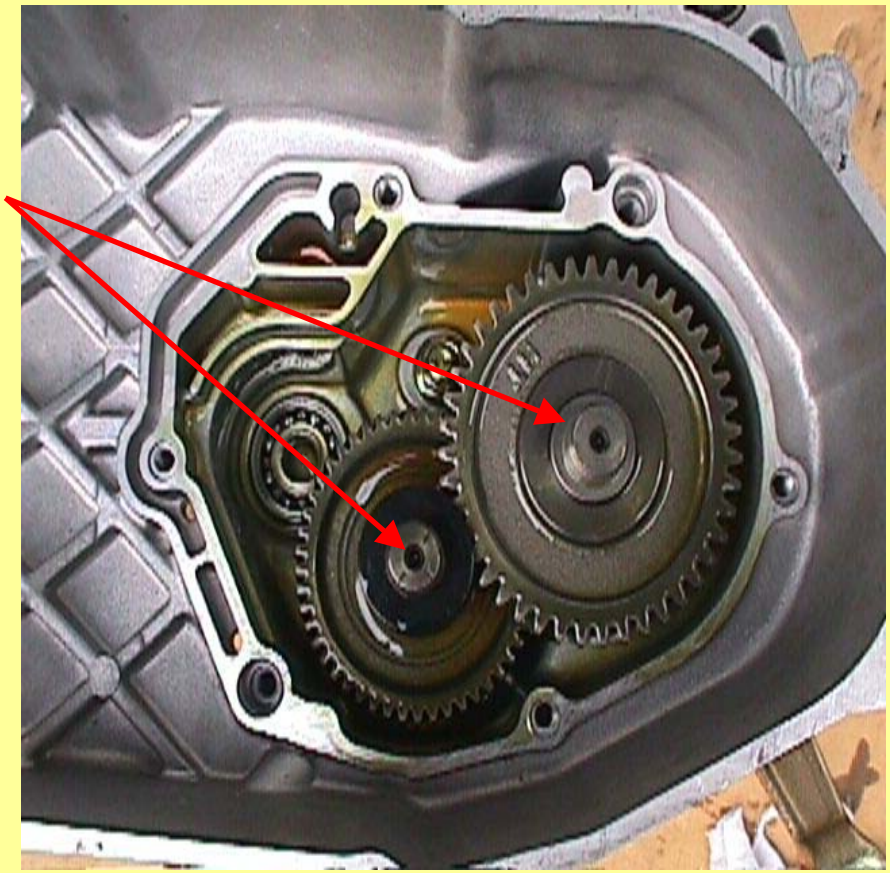
GEAR BOX DISASSEMBLY(2)

- Loosen 6 hexagon screws
- Remove transmission cover



GEAR BOX DISASSEMBLY(3)

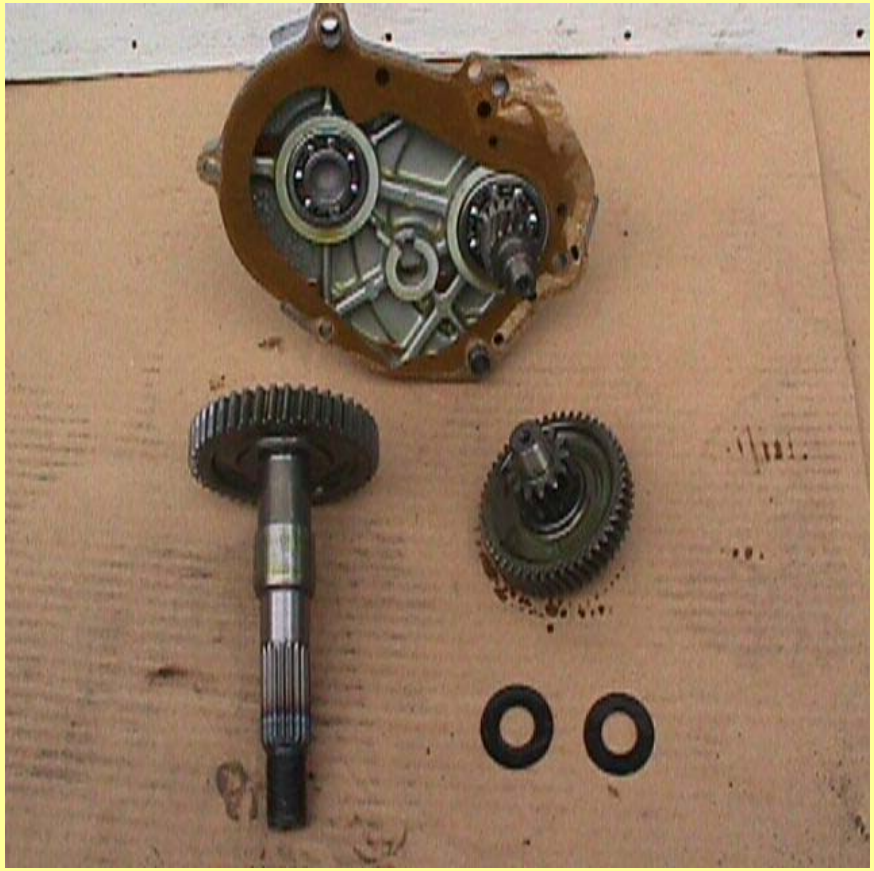
- Remove idle gear comp & final gear



GEAR BOX DISASSEMBLY(4)

- Mount the idle gear comp. first, then the final fear
- The cone washer is inside, and plain washer outside when assembling idle gear

☆ Replace oil seal and packing

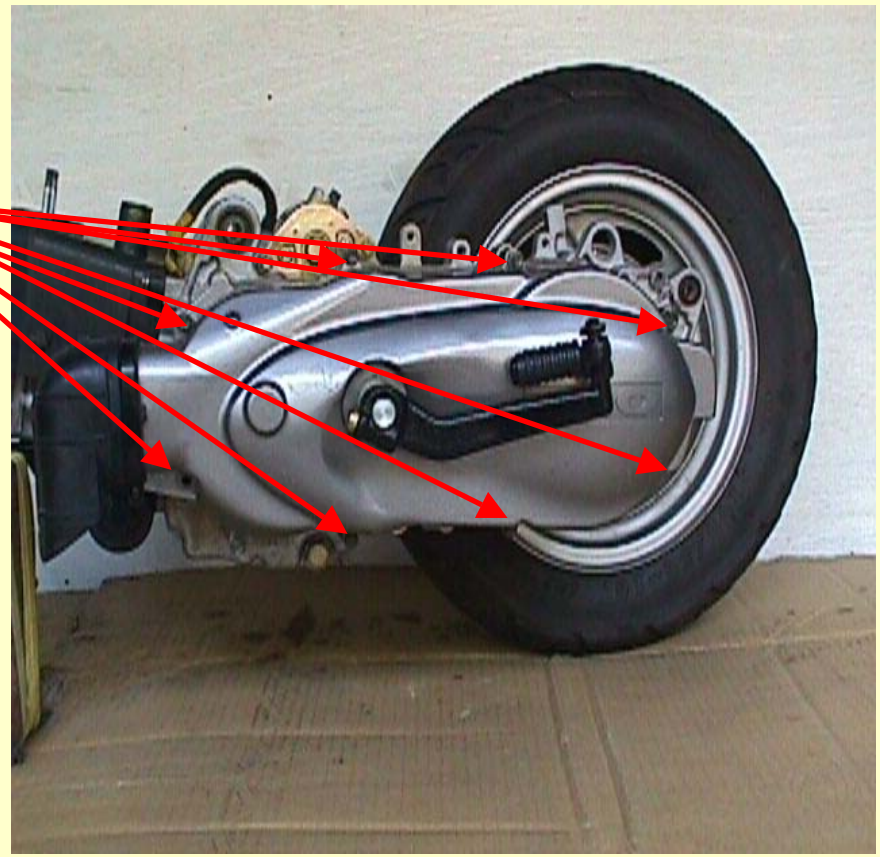


ENGINE DISMANTLE

- Loosen screws of engine hanger from frame

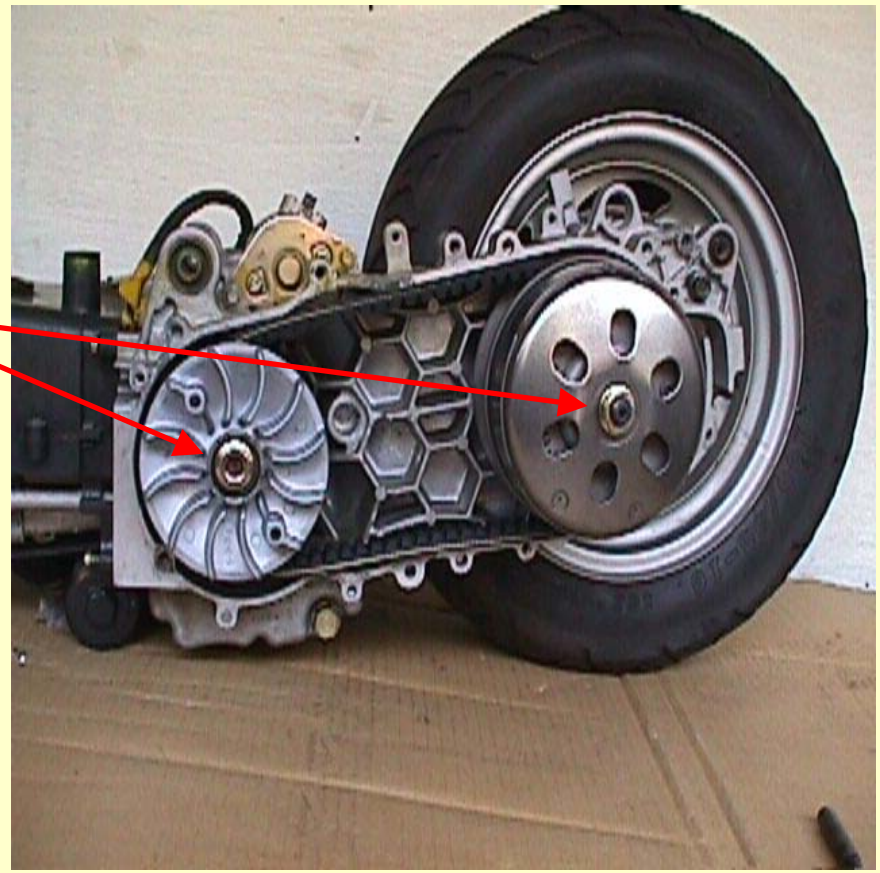
TRANSMISSION DISASSEMBLY(1)

- Loosen 8 hexagon flange screws of LH cover
- Remove engine LH cover



TRANSMISSION DISASSEMBLY(2)

- Loosen nuts of driving pulley and clutch outer
- When installing nuts, tighten torque is 5.5 kg-m

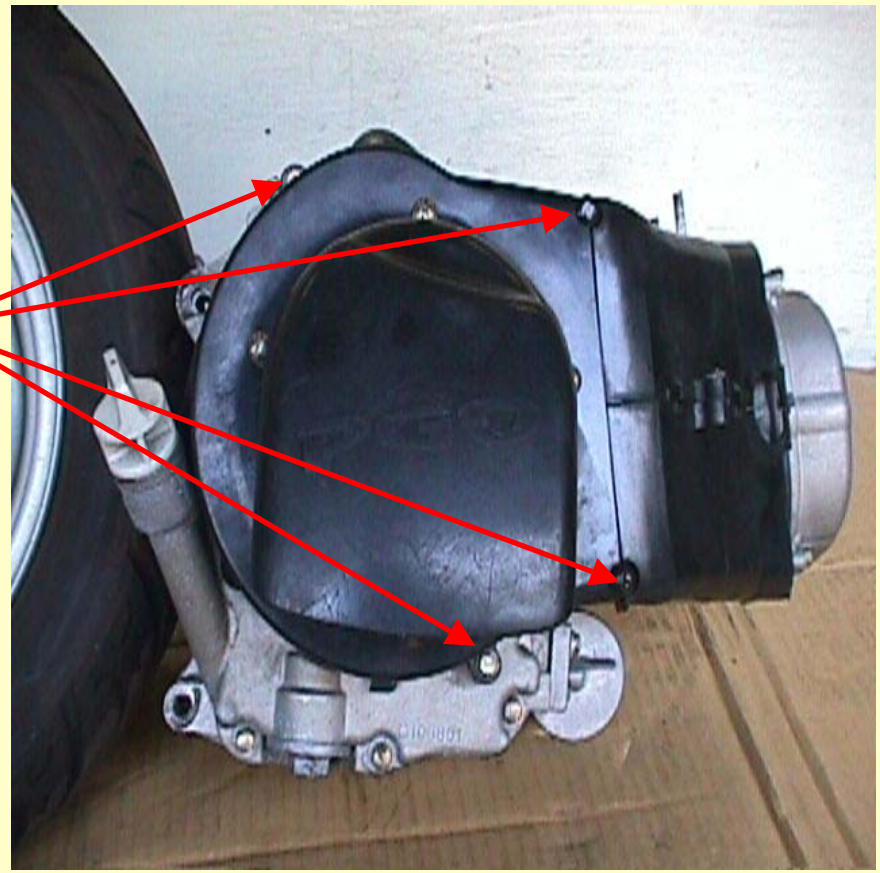


TRANSMISSION DISASSEMBLY(3)

- Remove drive face, driving pulley assy., driven pulley assy., V-belt

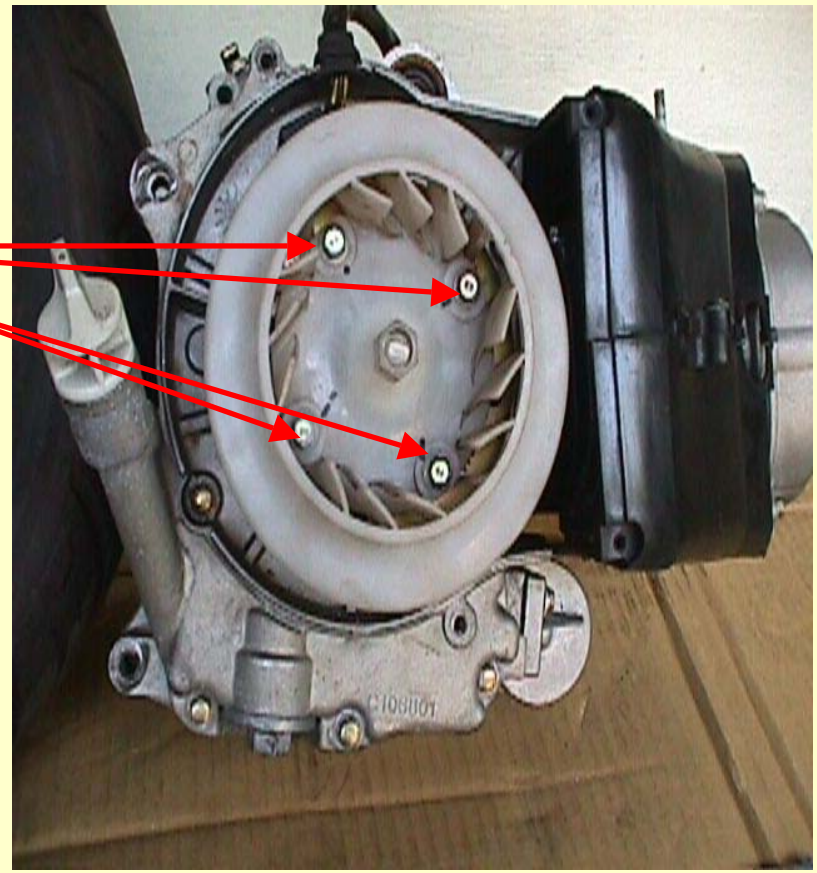
MAGNETO DISASSEMBLY(1)

- Loosen 2 hexagon screws and 2 C-R recess pan hd. tapping screws
- Remove fan cover



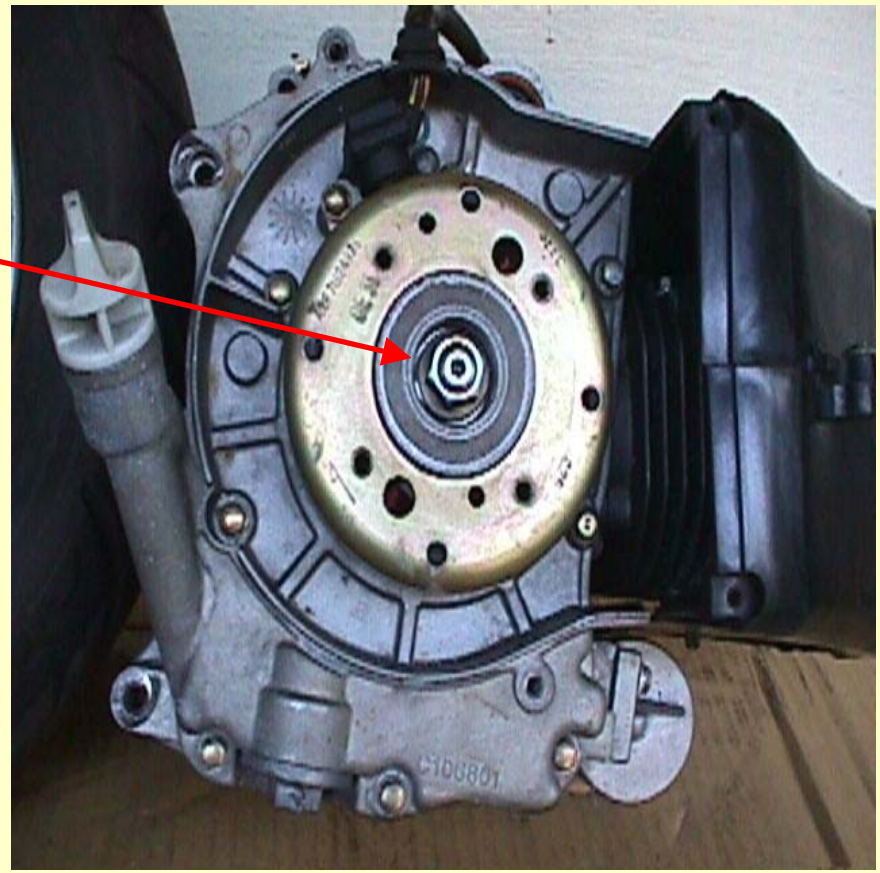
MAGNETO DISASSEMBLY(2)

- Loosen 4 hexagon screws of cooling fan
- Remove cooling fan



MAGNETO DISASSEMBLY(3)

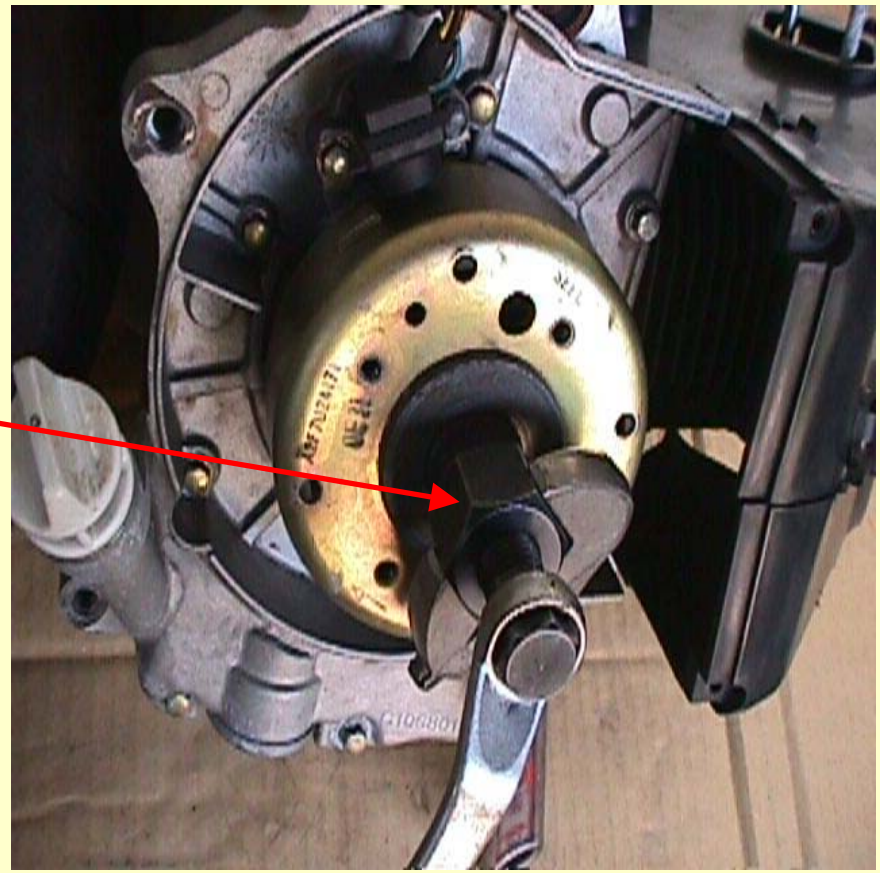
- Loosen nut of magneto
- When installing, tighten lock torque is 5.5 kg-m



MAGNETO DISASSEMBLY(4)

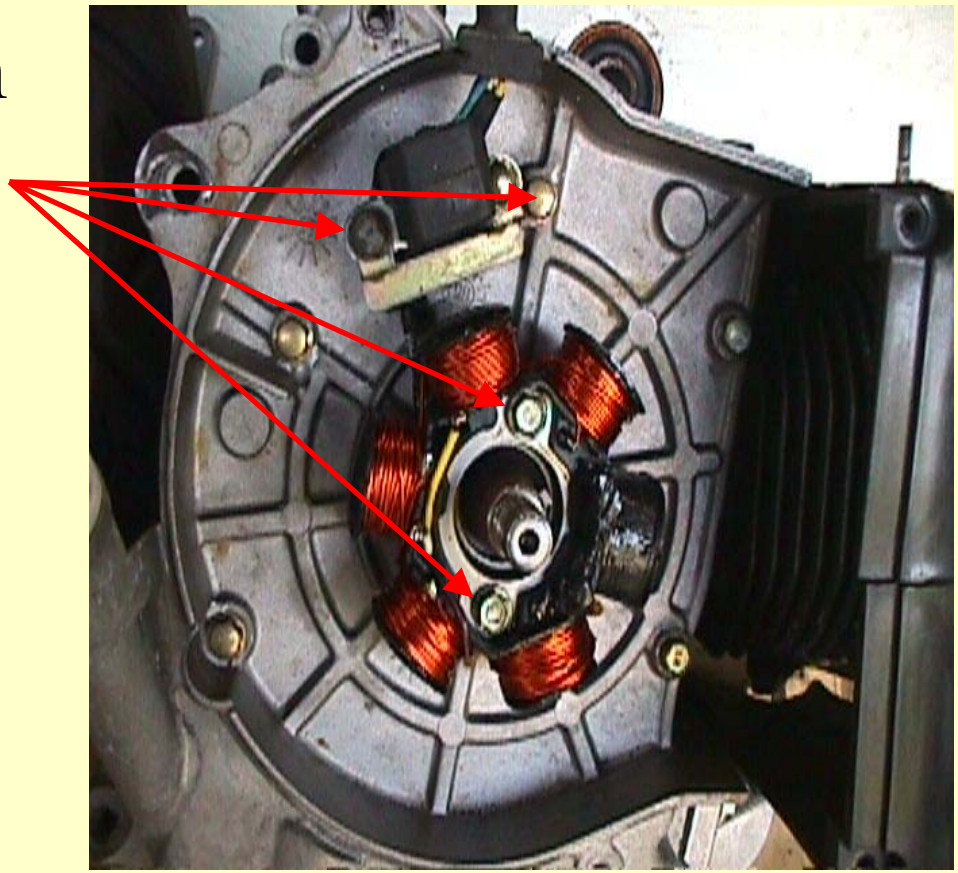
- Pull out the magneto with special tool
- part no: **S620402G01A**

☆tool should be tighten lock



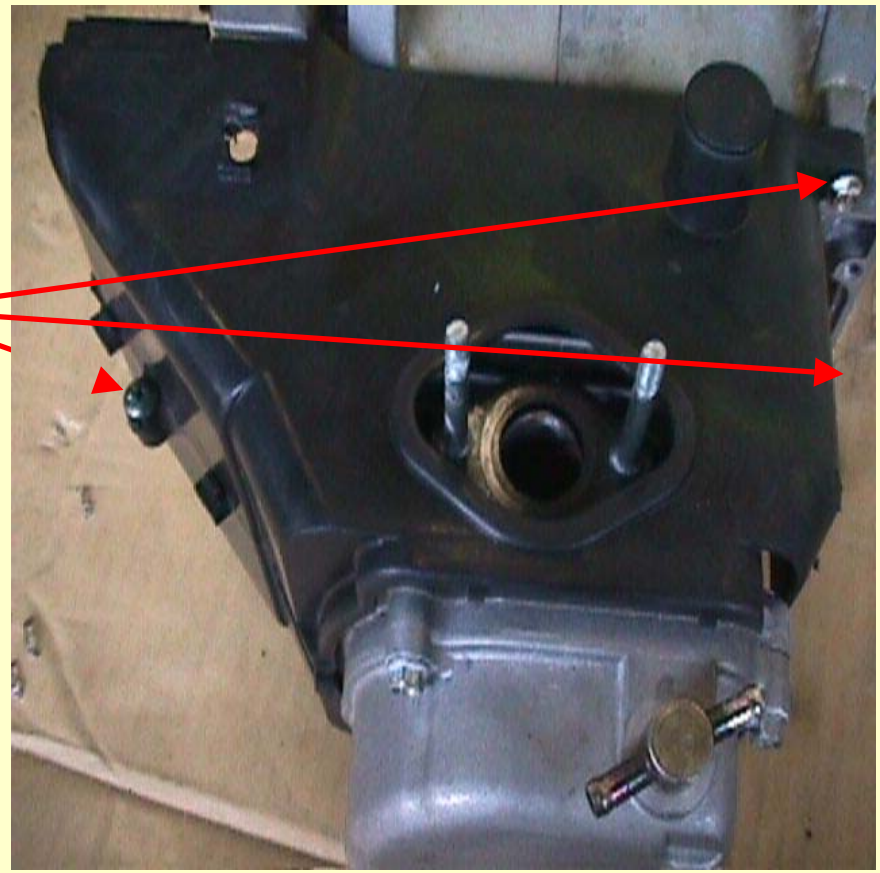
MAGNETO DISASSEMBLY(5)

- Loosen 4 hexagon screws of stator
- Remove stator



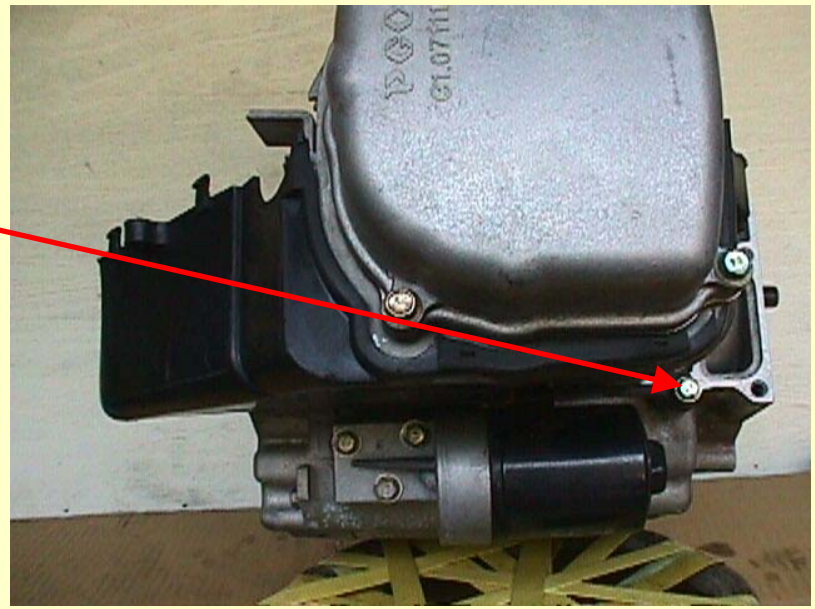
CYLINDER AND HEAD DISASSEMBLY(1)

- Loosen 1 hexagon screw and 2 tapping screws of cooling cowl(2)
- Remove cooling cowl(2)



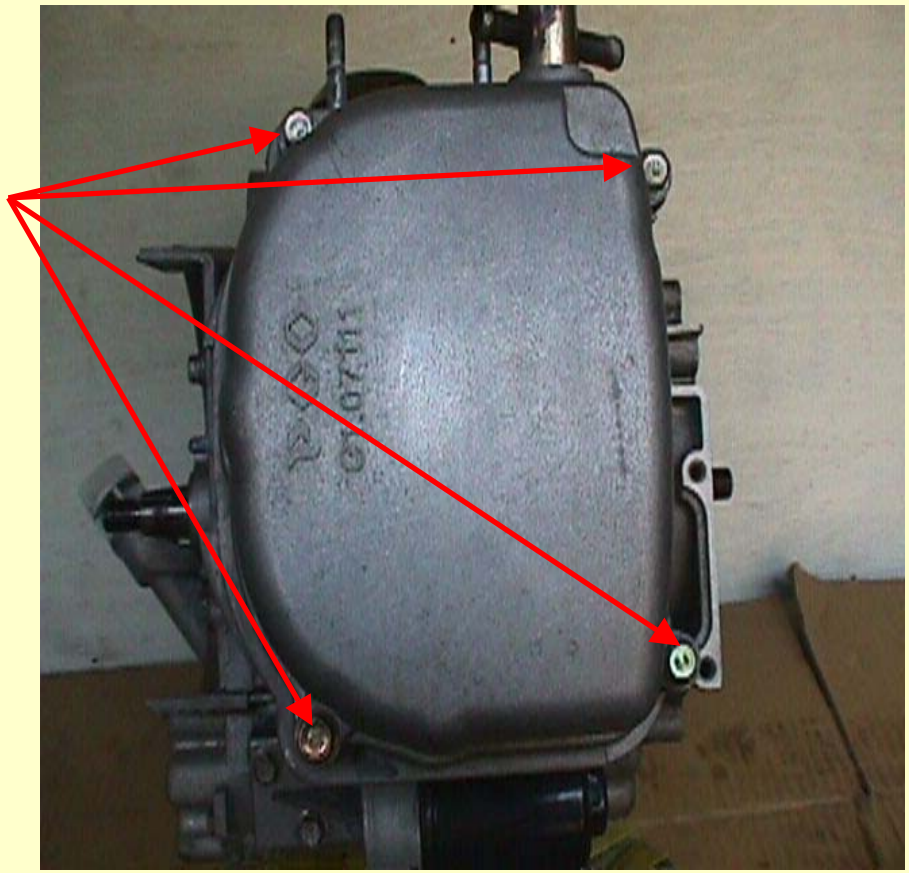
CYLINDER AND HEAD DISASSEMBLY(2)

- Loosen 1 hexagon screw of cooling cowl(1)
- Remove cooling cowl(1)



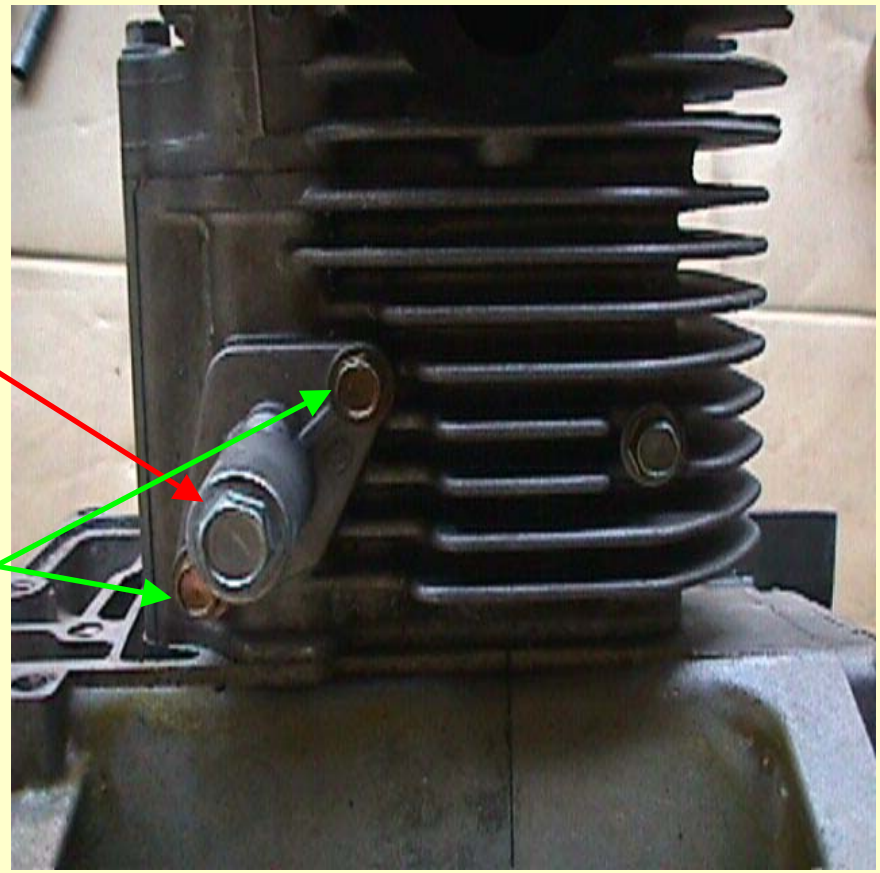
CYLINDER AND HEAD DISASSEMBLY(3)

- Loosen 4 hexagon screws of cylinder head cover
- Remove cylinder head cover assy.



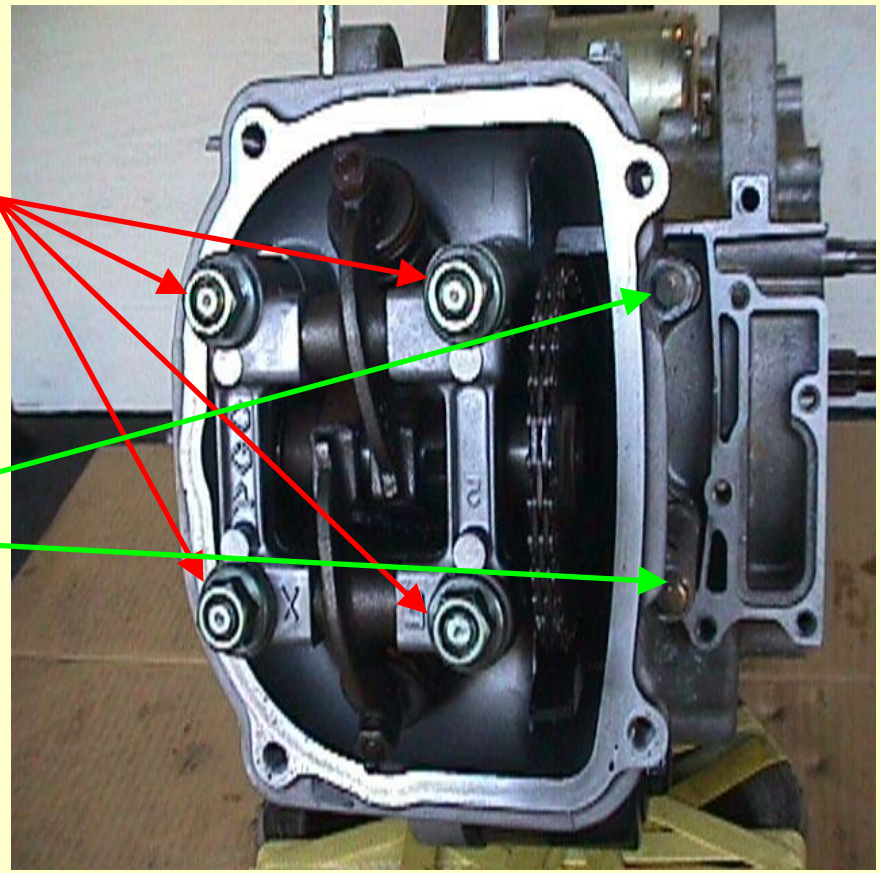
CYLINDER AND HEAD DISASSEMBLY(4)

- Loosen 1 hexagon screw of chain adjuster
- Loosen 2 hexagon screws fixed in cylinder
- Remove chain adjuster comp.



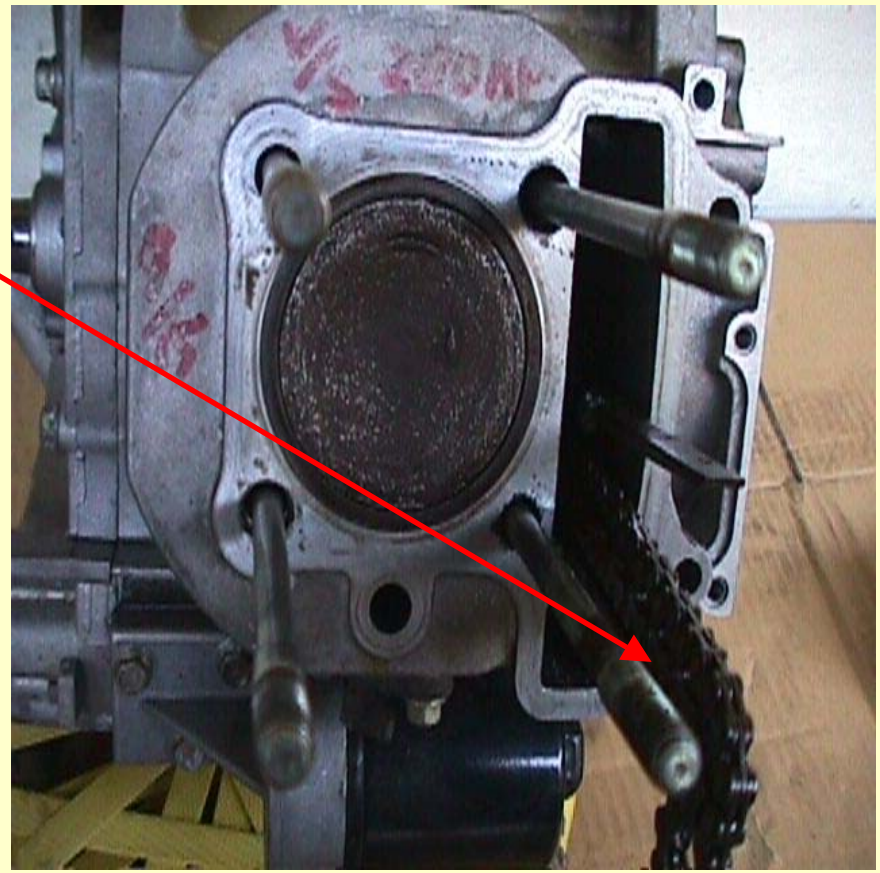
CYLINDER AND HEAD DISASSEMBLY(5)

- Loosen 4 nuts of camshaft holder
- Loosen 2 hexagon screw of cylinder head
- Remove camshaft holder、camshaft and cylinder head



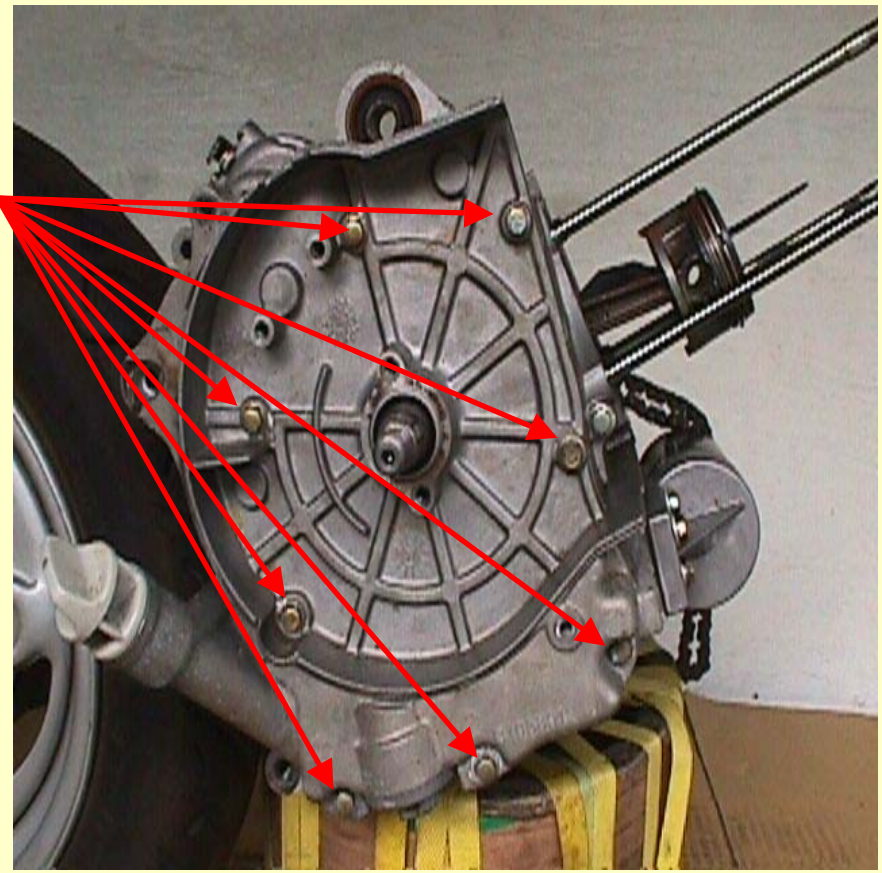
CYLINDER AND HEAD DISASSEMBLY(6)

- Remove cam chain guide comp.
- Remove cylinder and piston rings



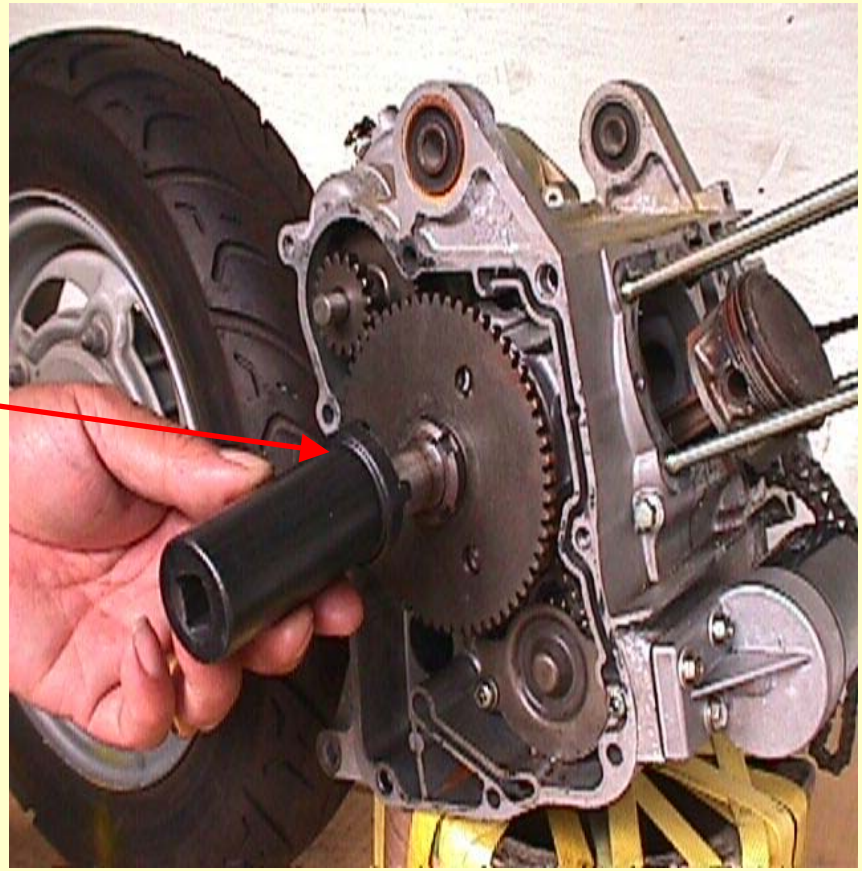
ONE WAY CLUTCH DISASSEMBLY(1)

- Loosen 8 hexagon screws of RH crankcase cover
- Remove RH crankcase cover



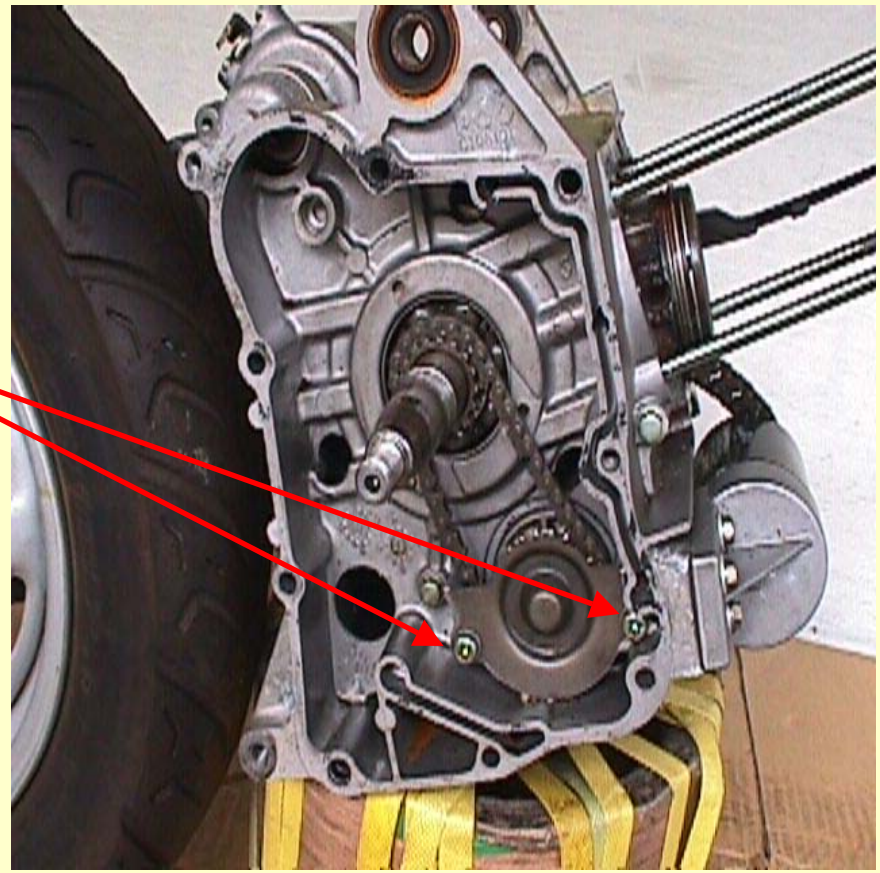
CYLINDER AND HEAD DISASSEMBLY(2)

- Loosen nut of one way clutch with special tool (part no: S620401G015)
- Remove one way clutch comp and starting idle gear
- The nut is LH thread



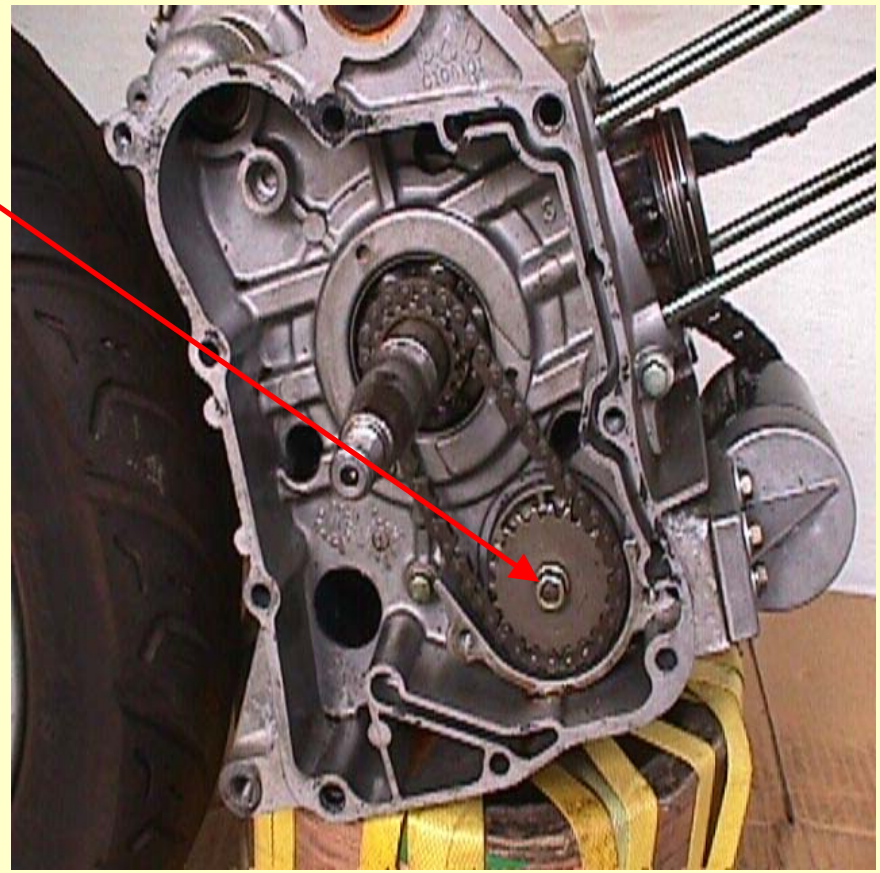
OIL PUMP DISASSEMBLY(1)

- Loosen 2 C-R recess screws of oil separator
- Remove oil separator



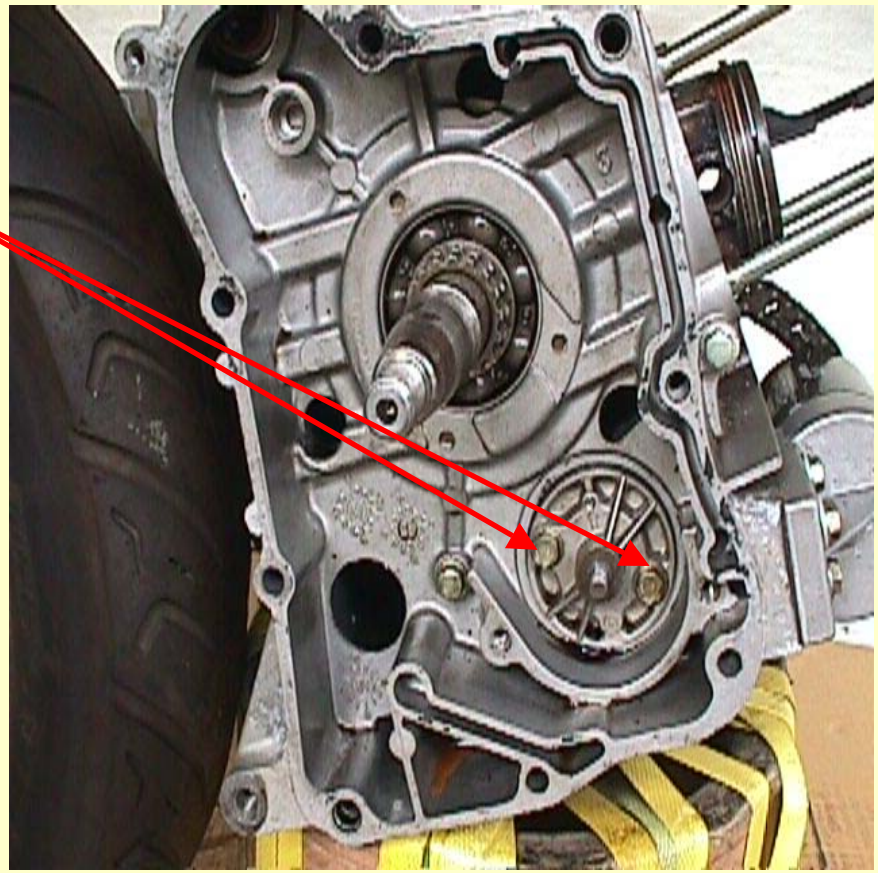
OIL PUMP DISASSEMBLY(2)

- Loosen nut of oil pump driving gear
- Remove oil pump driving gear and chain



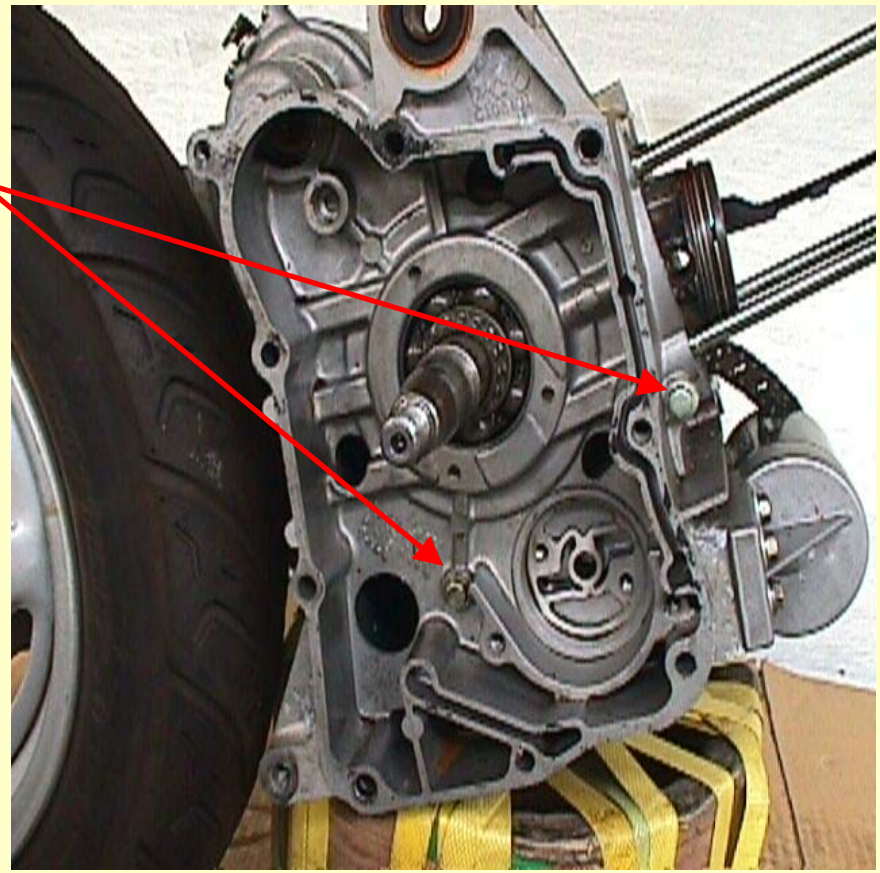
OIL PUMP DISASSEMBLY(3)

- Loosen 2 hexagon screws of oil pump
- Remove oil pump



CRANKSHAFT DISASSEMBLY(1)

- Loosen 2 hexagon screws of RH crankcase
- Remove RH crankcase with plastic hammer

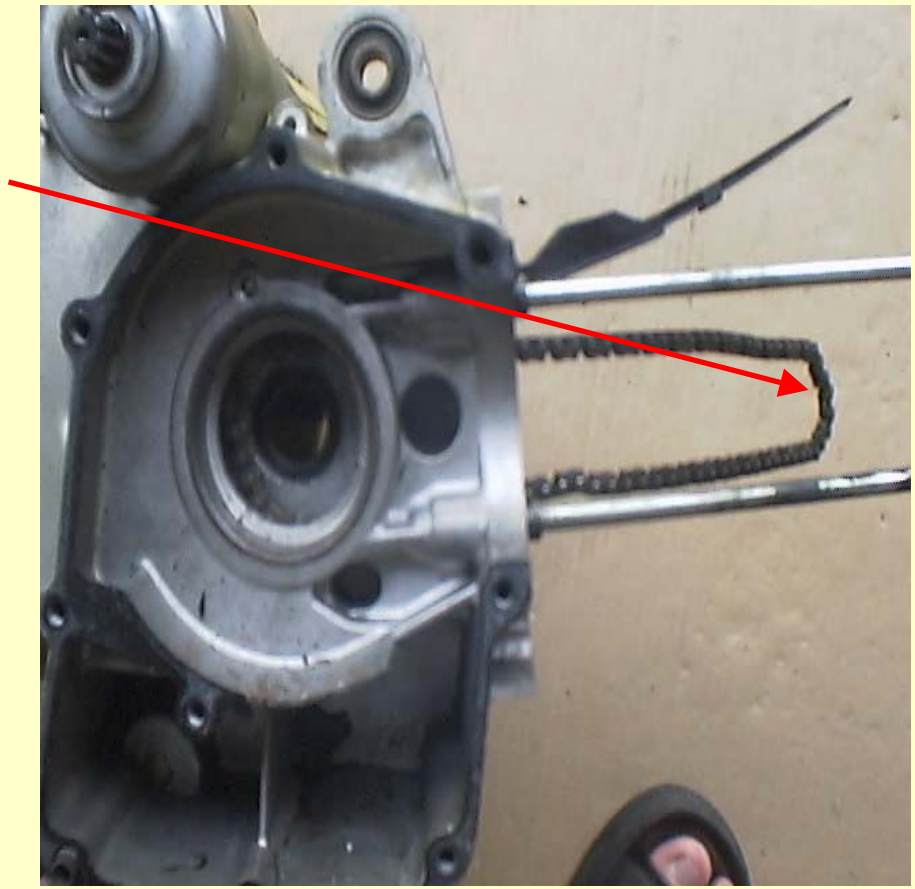


CRANKSHAFT DISASSEMBLY(2)

- Pull out crankshaft from LH crankcase
- Remove camshaft chain

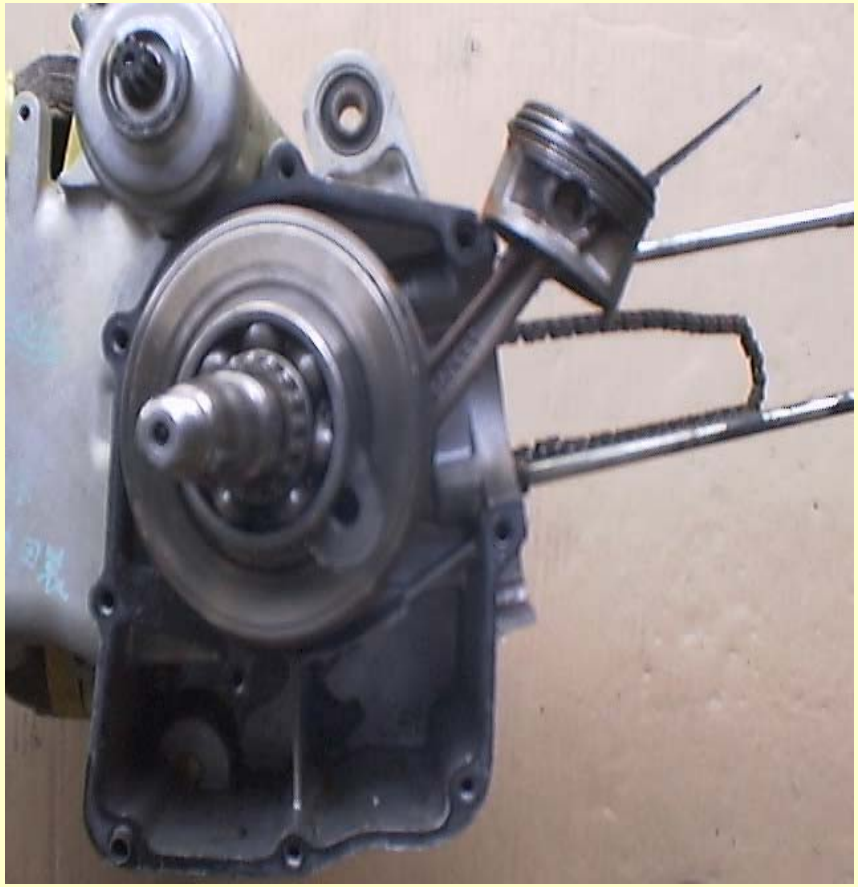
CRANKSHAFT INSTALLATION(1)

- Put camshaft chain in LH crankcase



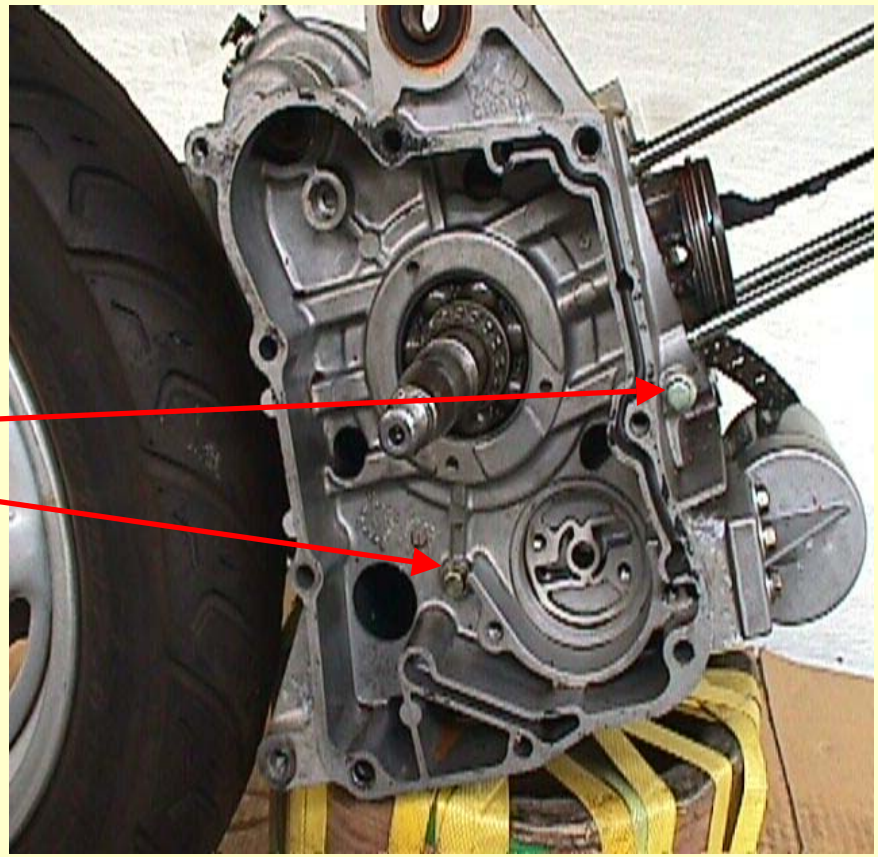
CRANKSHAFT INSTALLATION(2)

- Assemble crankshaft in LH crankcase



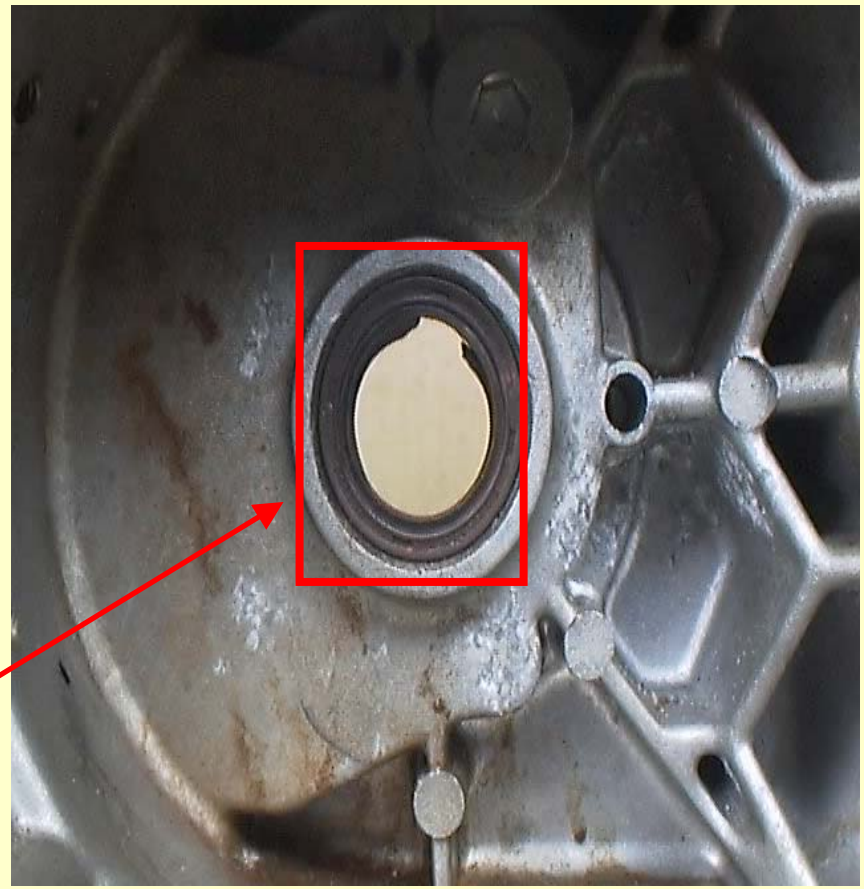
CRANKSHAFT INSTALLATION(3)

- Assemble RH crankcase into crankshaft
- Tight 2 hexagon screws
- (torque is1.0kg-m)
- Replace the oil seal and packing.



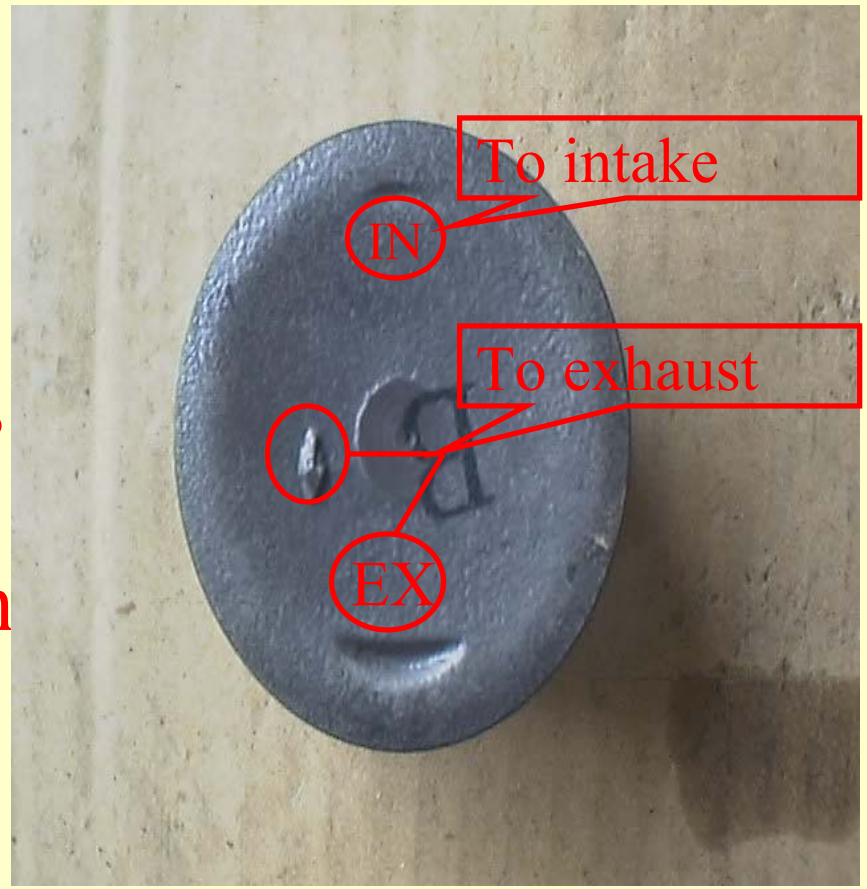
CRANKSHAFT INSTALLATION(4)

- To avoid the oil seal detected, shall assemble the oil seal after crankshaft is fixed in crankcase



CYLINDER & CYLINDER HEAD INSTALLATION

- Notice the marks upon piston
- “IN” mark shall in the intake direction ; “EX” mark shall in the exhaust direction

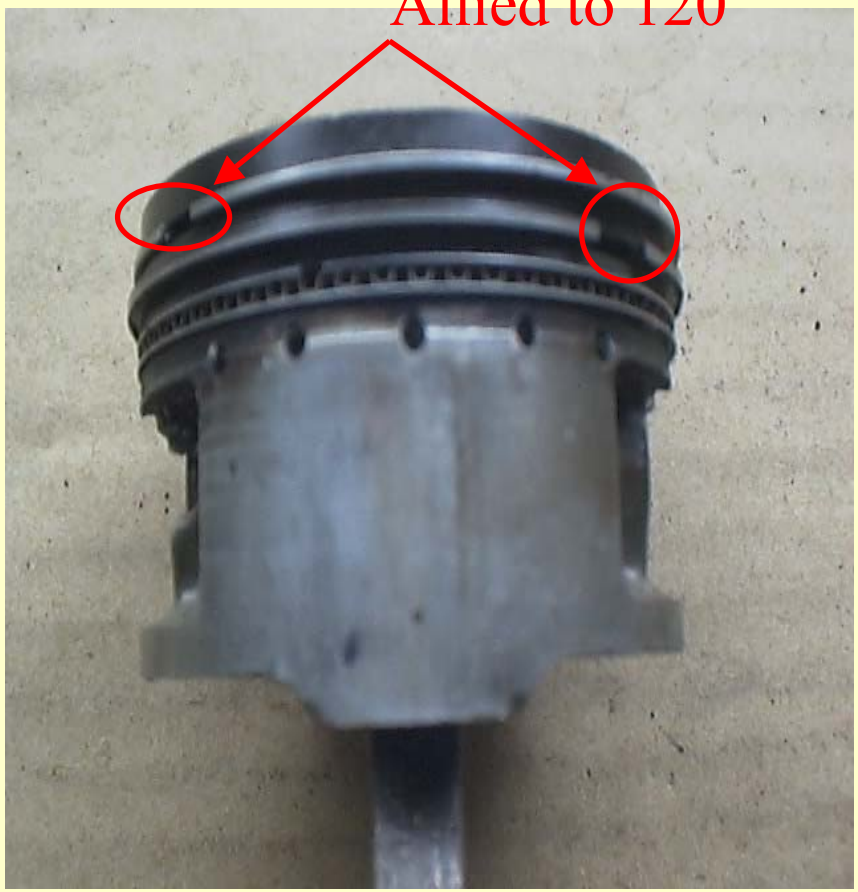


CYLINDER & CYLINDER HEAD INSTALLATION

- Piston rings shall be installed according to marks
- 1st ring is marked “1R” ; 2nd ring is marked “RN”
- The marks shall face to piston head

CYLINDER & CYLINDER HEAD INSTALLATION

- The opening end of piston rings shall face to intake valve and allied to 120 degree
- And shall not allied to the piston pin

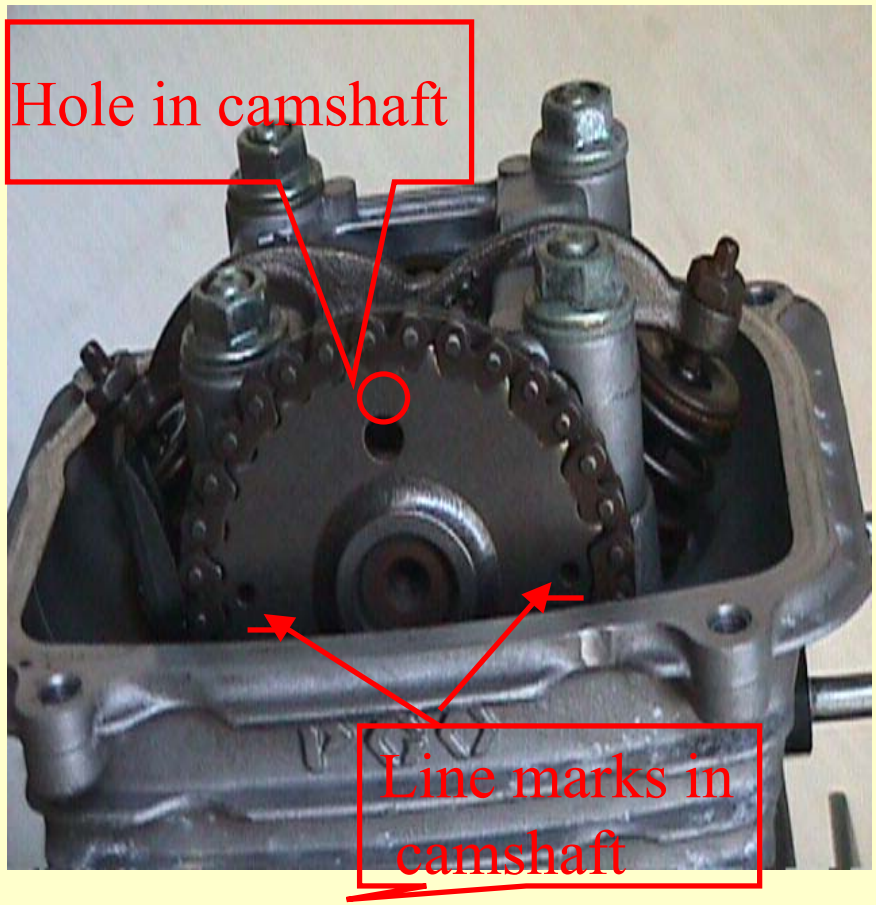


CYLINDER & CYLINDER HEAD INSTALLATION

- Installing camshaft, the valve timing shall be adjusted
- Rotate the magneto “T” make to RH crankcase allied position

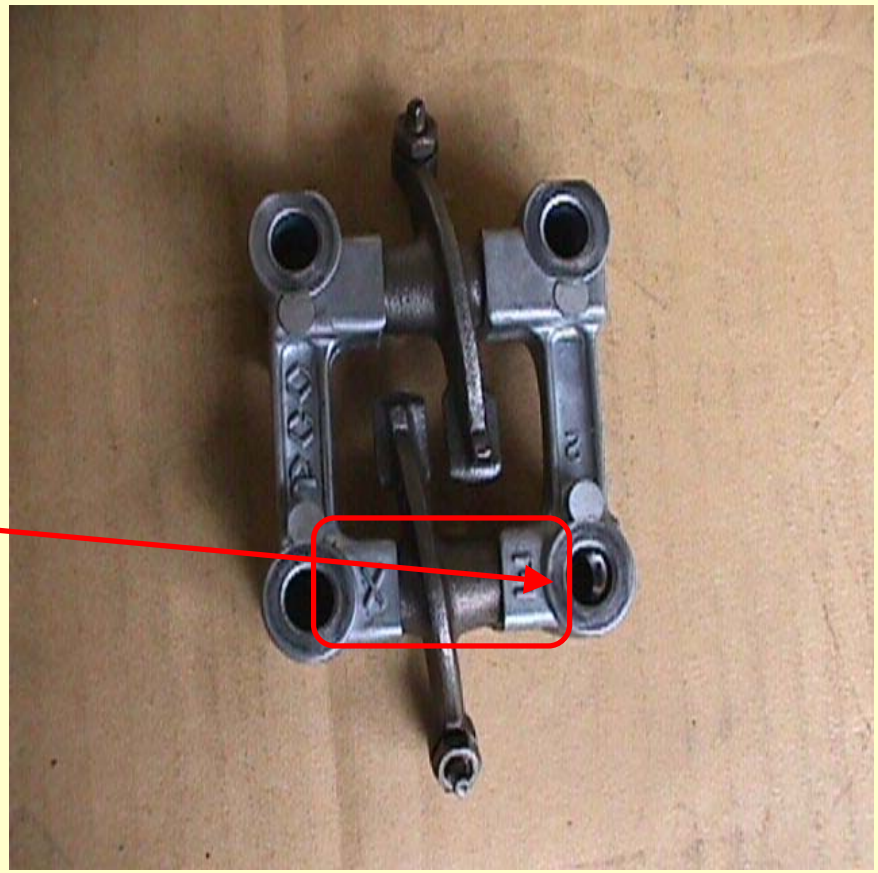
CYLINDER & CYLINDER HEAD INSTALLATION

- Ensure 2 line marks of camshaft parallel to cylinder head （refer to photo）
- And the hole shall be in the top position （refer to photo）



CYLINDER & CYLINDER HEAD INSTALLATION

- Installing camshaft holder，“EX” mark shall face to exhaust valve
- Tighten 4 nuts crossly, lock torque is 2.0 kg-m



TRANSMISSION INSPECTION AND ADJUSTMENT

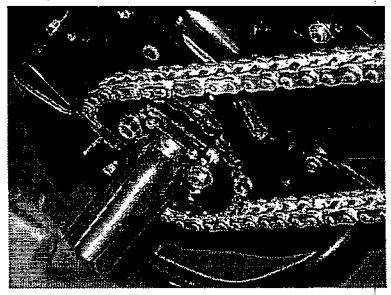
1.Check the driving elements

(1) Drive chain

- Check the drive chain for slack or dryness.

  Slack/damaged➔replace

  Worn/damaged➔replace

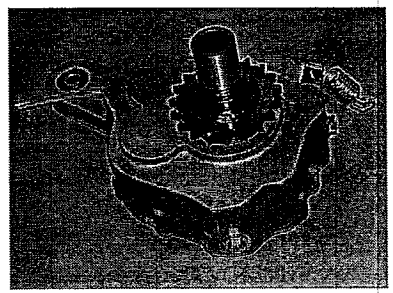


(2) Sprocket

- Check the sprocket

  Worn/deformed➔replace

- If dry, apply grease or lubricant to the sprocket or drive chain.



(3) Adjust

- Loosen the lock nut of rear axle bearing seat assembly and adjust the adjusting nut to make the drive chain tight as specified.
- Then tighten the lock nut of the bearing seat ot the specified torque.

Torque:

Axle bearing seat lock nut: 4.0~5.0 kg•m

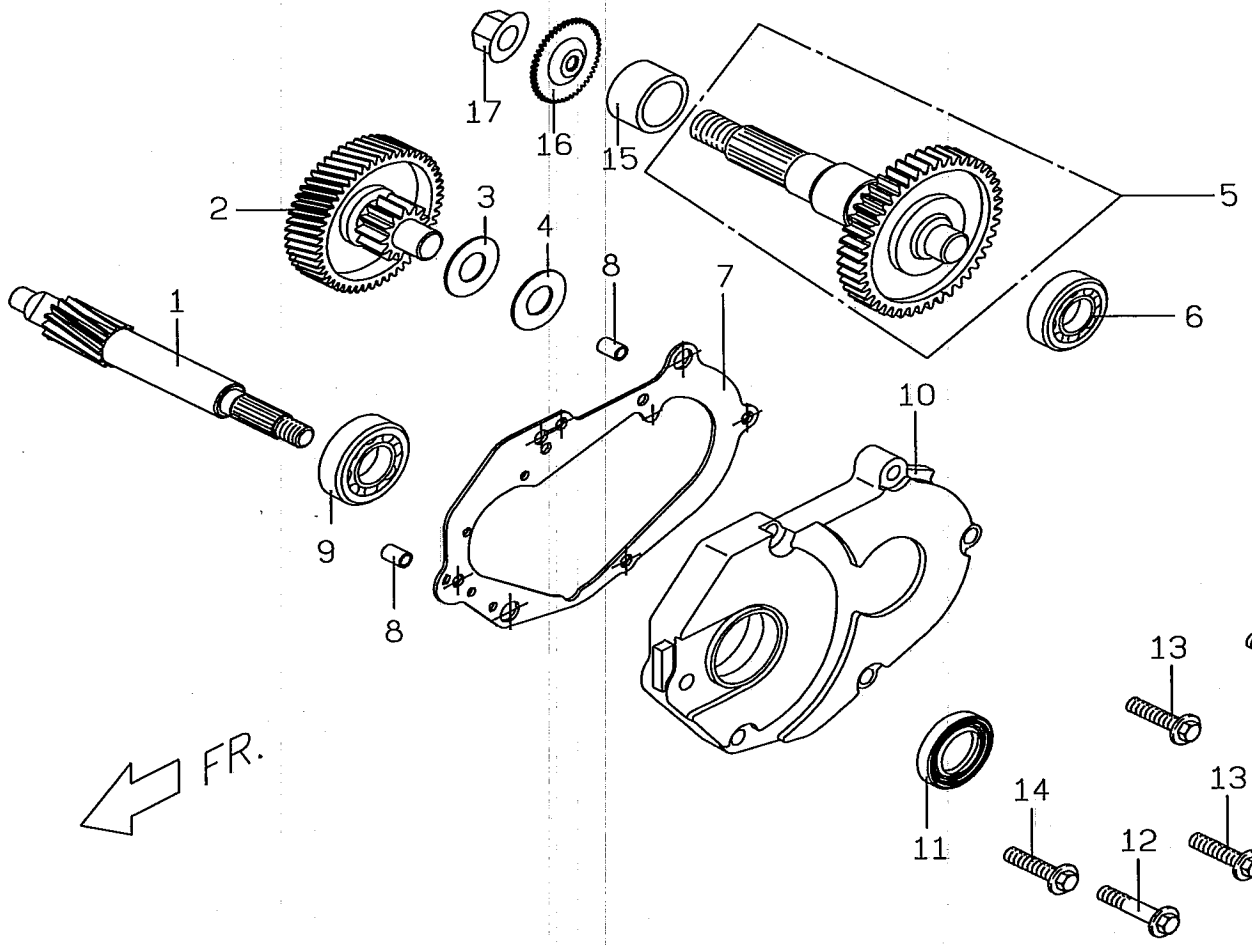
2. Check the CVT system

- the continuous various transmission system is basically designed as a consuming parts. Including V-belt, roller, slide piece, clutch lining, driving face assembly…etc, are all consumable. Please check it after running a period of time, or whenever the acceleration rapid becomes poorly.
- According to the following table, you can measure the parts to make a fine judgement.

CVT parts measurement data:

Item	Standard value (mm)	Limit of use (mm)	Standard value (mm)	Limit of use (mm)	Standard value (mm)	Limit of use (mm)
Model	XR50		XR110		XR150	
The inner dia. Of slide driving plate	20.035~20.085	20.123	23.989~24.052	24.240	24.011~24.052	24.10
The outer dia. Of boss, movable Driving plate	19.960.~19.974	19.911	23.960.~23.974	23.934	23.960.~23.974	23.940
Belt width	18.0~19.0	17.0	18.0~19.0	17.0	20.0~21.0	19.0
Clutch lining thickness	3	1.5	3	1.5	3	1.5
Clutch outer diameter	117.0~117.2	117.5	120.0~120.2	120.5	125.0~125.2	125.5
Driven plate spring, free length	87.9	82.5	154.6	149.3	151	127
The outer diameter of driven Plate sets	33.965~34.025	33.95	33.965~34.025	33.95	33.965~34.025	33.95
The inner diameter of slide Driven plate	34.000~34.025	34.070	34.000~34.025	34.050	34.000~34.025	34.06
The outer diameter of weight Roller set	15.992~16.008	15.50	15.922~16.008	15.50	17.920~18.080	17.40

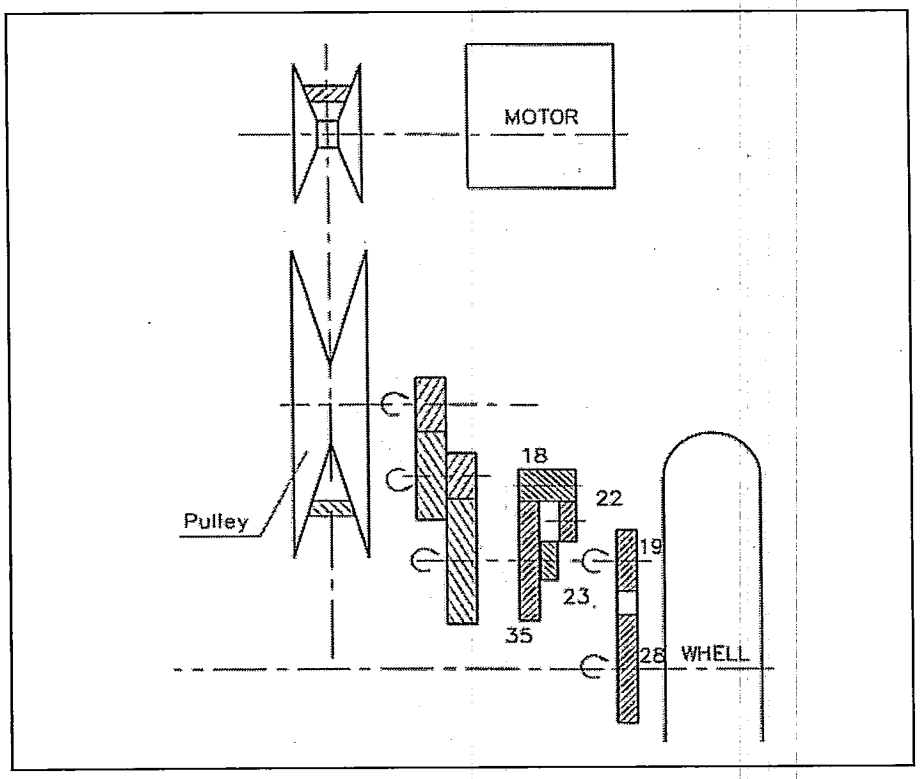
TRANSMISSION
EXPLOSIVE PARTS:

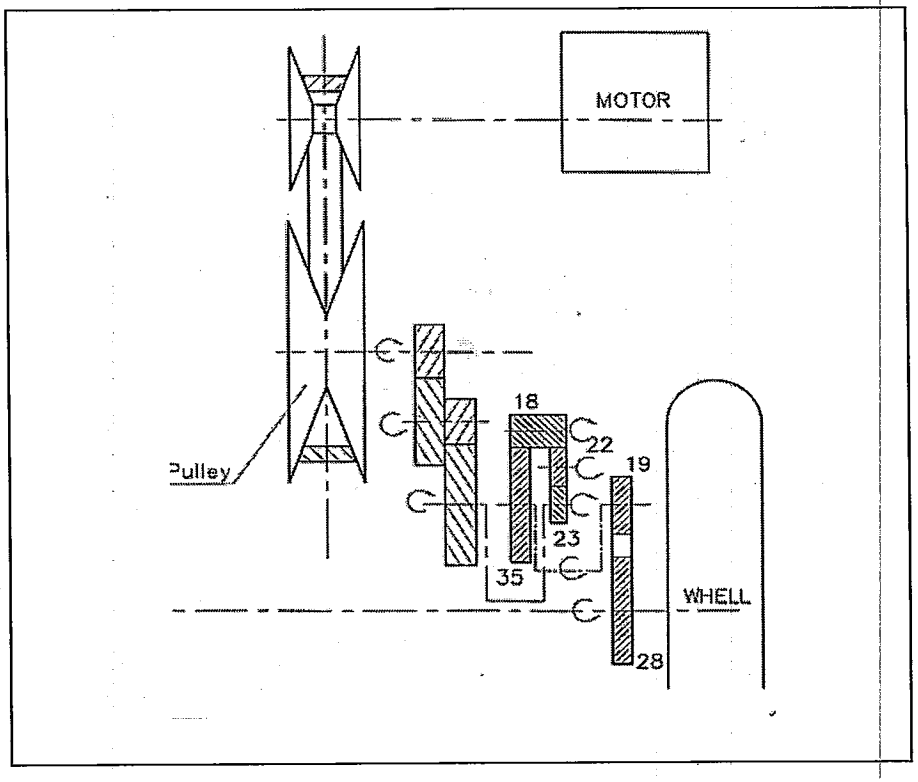


01	DRIVE SHAFT
02	IDLE GEAR COMP.
03	DISC SPRING WASHER
04	PLAIN WASHER
05	FINAL GEAR ASSY.
06	BALL BEARING
07	TRANSMISSION COVER GASKET
08	LOCK PIN
09	BALL BEARING
10	TRANSMISSION COVER
11	OIL SEAL TC TYPE
12	HEXAGON FLANGE BOLT
13	HEXAGON FLANGE BOLT
14	HEXAGON FLANGE BOLT
15	COLLAR
16	SPROCKET
17	U TYPE NUT

Transmission system and reduction ratio

Model		XR50	XR110	XR150
CVT	Initial	2.416	2.321	2.387
	Final	0.877	0.771	0.800
Gear box		52/13 * 44/13 T	49/16 * 43/13 T	40/16 * 42/13 T
Chain sprocket		32/16 T	28/19 T	28/19 T
Reverse gear		NA	22/23 * 35/18 T	22/23 * 35/18 T

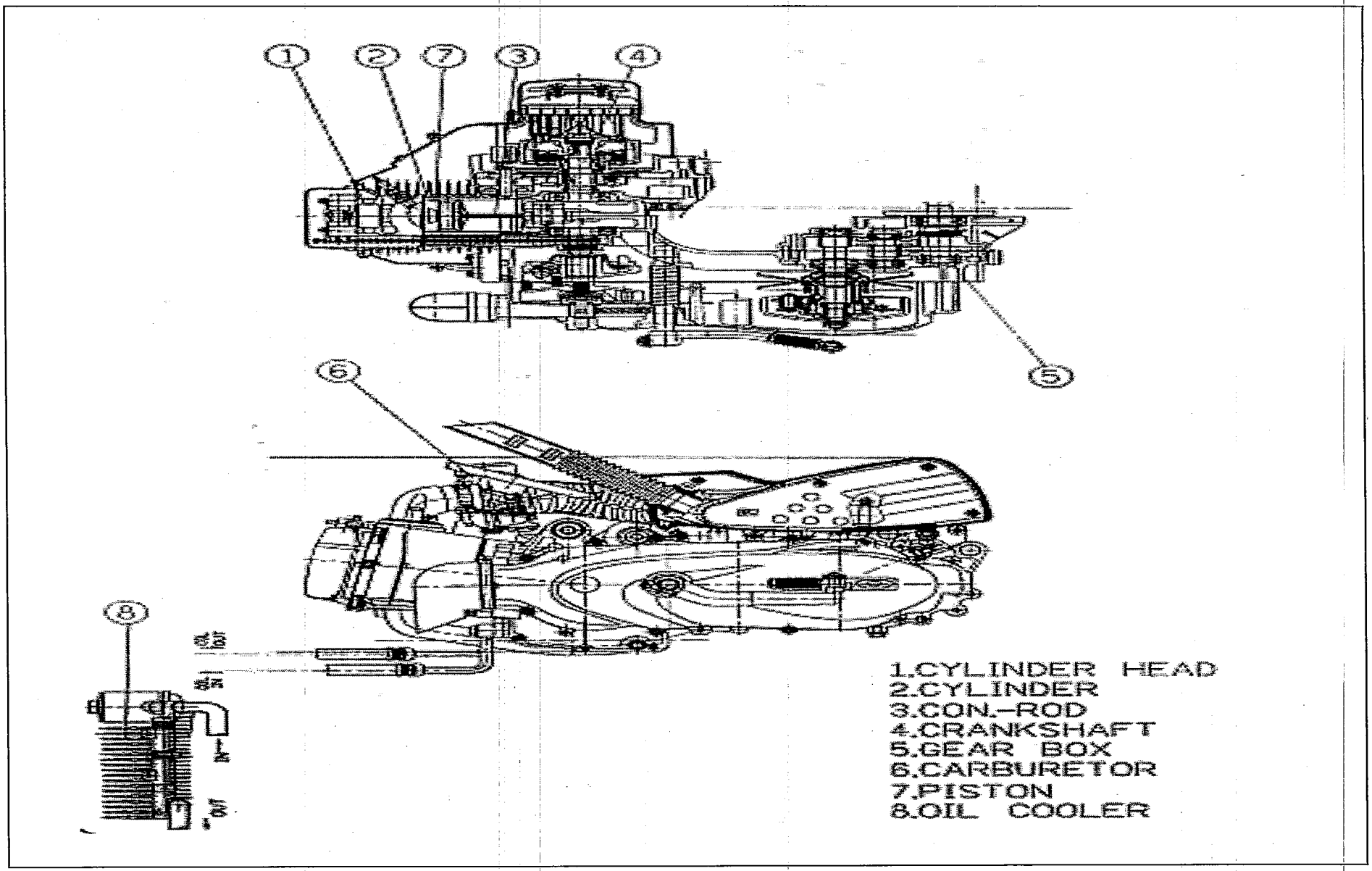




PISTON & CYLINDER DATAS:

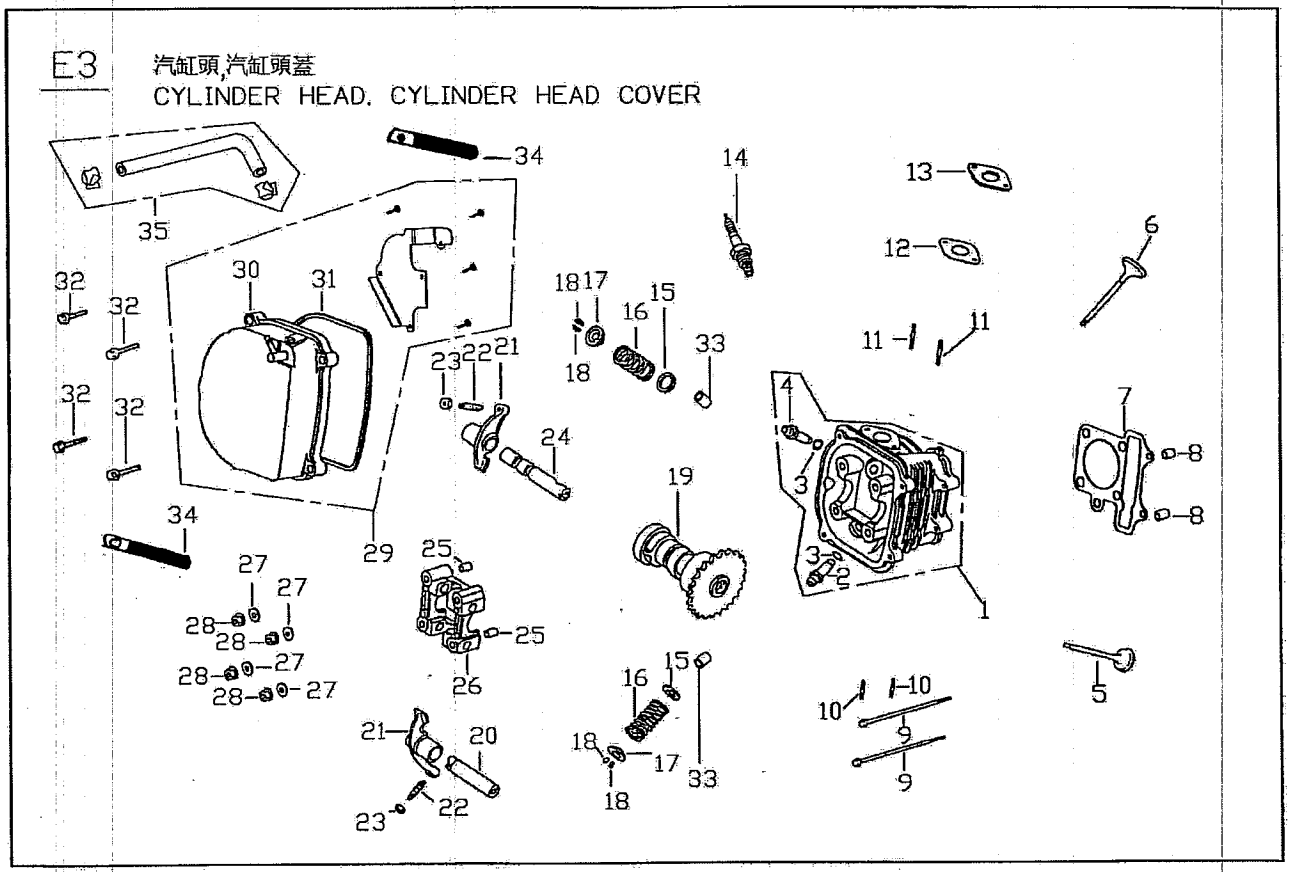
Part name /description			Standard (mm)	Limit (mm)	Standard (mm)	Limit (mm)	Standard (mm)	Limit (mm)
Model			XR50		XR110		XR150	
Cylinder head	flatness			0.100		0.100		
Cylinder	Bore		39.995~40.015	40.050	52.00~52.20	52.050	57.490~57.510	57.600
	Curve		-	-	0.05	0.05	-	0.05
	Cylindrility		-	-	0.05	0.05	-	0.05
	Roundness		-	-	0.05	0.05	-	0.05
Piston/ Piston ring	Clearance b/w Piston and Piston ring	lst ring	0.05~0.06	0.10	0.035~0.045	0.03~0.07	0.10	
		2nd ring	0.05~0.06	0.10	0.035~0.045	0.02~0.06	0.10	
	Clearance of cutting section	lst ring	0.10~0.30	0.40	0.15~0.35	0.10~0.25	0.50	
		2nd ring	0.10~0.30	0.40	0.15~0.35	0.10~0.25	0.50	
						0.2~0.7	---	
	Piston outer diameter		39.950~39.970	39.895	51.960~51.98	51.905	57.475~57.490	57.400
	Measuring location of piston outer dia.		12 mm from the lower end of skirt				5 mm from the lower end of skirt	
	Clearance b/w piston and cylinder		0.045~0.065	0.10	0.040~0.060	0.10	0.025~0.035	0.10
	Piston pin hole inner dia		13.022~13.013	13.045	13.022~13.013	13.045	15.006~15.012	15.030
Piston pin hole inner diameter			10.002~10.008	10.025	14.004~14.010	14.032	14.990~14.992	12.96
Piston pin outer diameter			9.994~10.000	9.970	13.998~14.000	13.074	0.020~0.017	0.025
Clearance between piston and piston pin			0.004~0.018	0.030	0.006~0.012	0.030	15.010~15.028	15.060
Connecting rod small end inner dia			13.996~14.007	14.025	18.002~18.010	18.020		

XR150 ENGINE LAYOUT:



Cylinder head exploded parts: XR150 model only

1	HEAD COMP. CYLINDER
2	"GUIDE,EXH VALVE "
3	O-RING
4	"GUIDE,IN VALVE "
5	VALVE EXHAUST
6	VALVE INLET
7	GASKET HEAD CYL.
8	LOCK PIN (D10*14L)
9	HEXAGON FLANGE BOLT
10	STUD BOLT
11	STUD BOLT
12	INSULATOR CARB GASKET
13	INSULATOR CARB
14	IGNITION PLUG (CR7HSA)
15	PLAIN WASHER
16	"SPRING,VALVE "
17	RETAIER VALVE SPRING
18	COTTER VALVE
19	"CAM,SHAFT ASSY."
20	"SHAFT,EX.ROCKER ARM"
21	VALVE RXKER ARM
22	SCREW TOPPED ADJUSTER
23	HEXAGON NUT
24	"SHAFT,EX.ROCKER ARM "
25	LOCK PIN
26	CAMSHAFT HOLDER
27	PLAIN WASHER
28	HEXAGON FLANGE NUT
29	CYL.HEAD COVER COMP.
30	CYL.HEAD COVER
31	"PACKING,CYL. HEAD COVER "
32	HEXAGON FLANGE BOLT
33	VALVE SEAL
34	CLIP
35	TUBE CYL. COMP.



A.Troubleshooting.

If the cylinder head is malfunctioned, usually it can tell from the measurement of the compression pressure or from the noise that comes from the upper part of the engine.

1.Unsmooth idle speed

-Compression pressure is too low.

2.Insufficient compression pressure.

-Poor adjustment of valve clearance

-Valve being burned out or bent

-Valve timing is not correct

-Valve spring is damaged.

-Poor sealing of valve base.

-Leakage in Cylinder head gasket.

-Cylinder head twisted or cracked.

-Spark plug is not properly installed.

3.Compression pressure is too high.

-There is too much carbon accumulated in the combustion chamber.

4.There is white fume coming out from the exhaust pipe.

-The valve stem or valve guide pipe is worn out.

-Valve stem's oil seal is damaged.

5.Abnormal noise

-Poor adjustment of valve clearance

-Valve burned or damaged spring

-Camshaft is worn out.

–Chain adjuster is worn out.

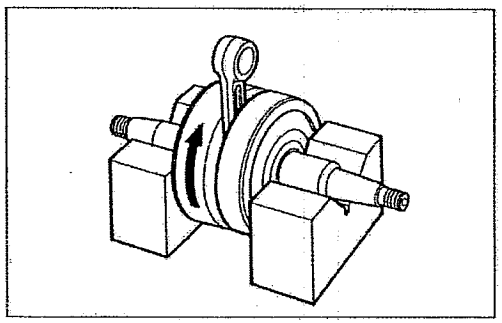
B.The operation data information (XR150)

Description	IN/EX	Standard Value (mm)	Limit of use (mm)
Clearance between adjuster tapped Screw and valve stem (Before warm up)	IN	0.08	—
	EX	0.08	—
Compression pressure(throttle open full)		11kg/700rpm	(XR150)
Height of the cam's convex part	IN	26.625(XR150)	26.23(XR150)
	EX	26.53(XR150)	26.13(XR150)
Inner diameter of rocker arm shaft	IN	10.00~10.015	10.10
	EX	10.00~10.015	10.10
Outer diameter of rocker arm shaft	IN	9.972~9.987	9.91
	EX	9.972~9.987	9.91
Valve base angle	IN&EX	1.0	1.8
Outer diameter of valve stem	IN	4.975~4.900	4.90
	EX	4.955~4.970	4.90
Inner diameter of valve guide	IN	5.000~5.012	5.30
	EX	5.000~5.012	5.30
Clearance between valve stem and Valve guide	IN	0.010~0.037	0.08

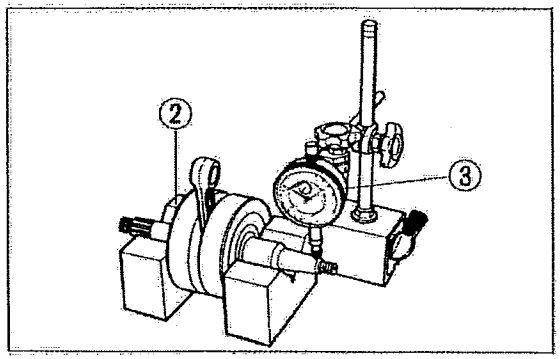
CRANKSHAFT DATA:

Item	Standard value(mm)	Limit of use.(mm)	Standard value(mm)	Limit of use.(mm)
Model	XR50/XR110		XR150	
Clearance of connecting rod big end axle direction	0.20~0.50	0.76	0.10~0.35	0.55
Clearance of connecting rod big end vertical direction.	---	0.04	---	0.04
Swingness of the crank shaft journal.	0.03	0.10	0.03	0.10

1. To check the rotating condition:

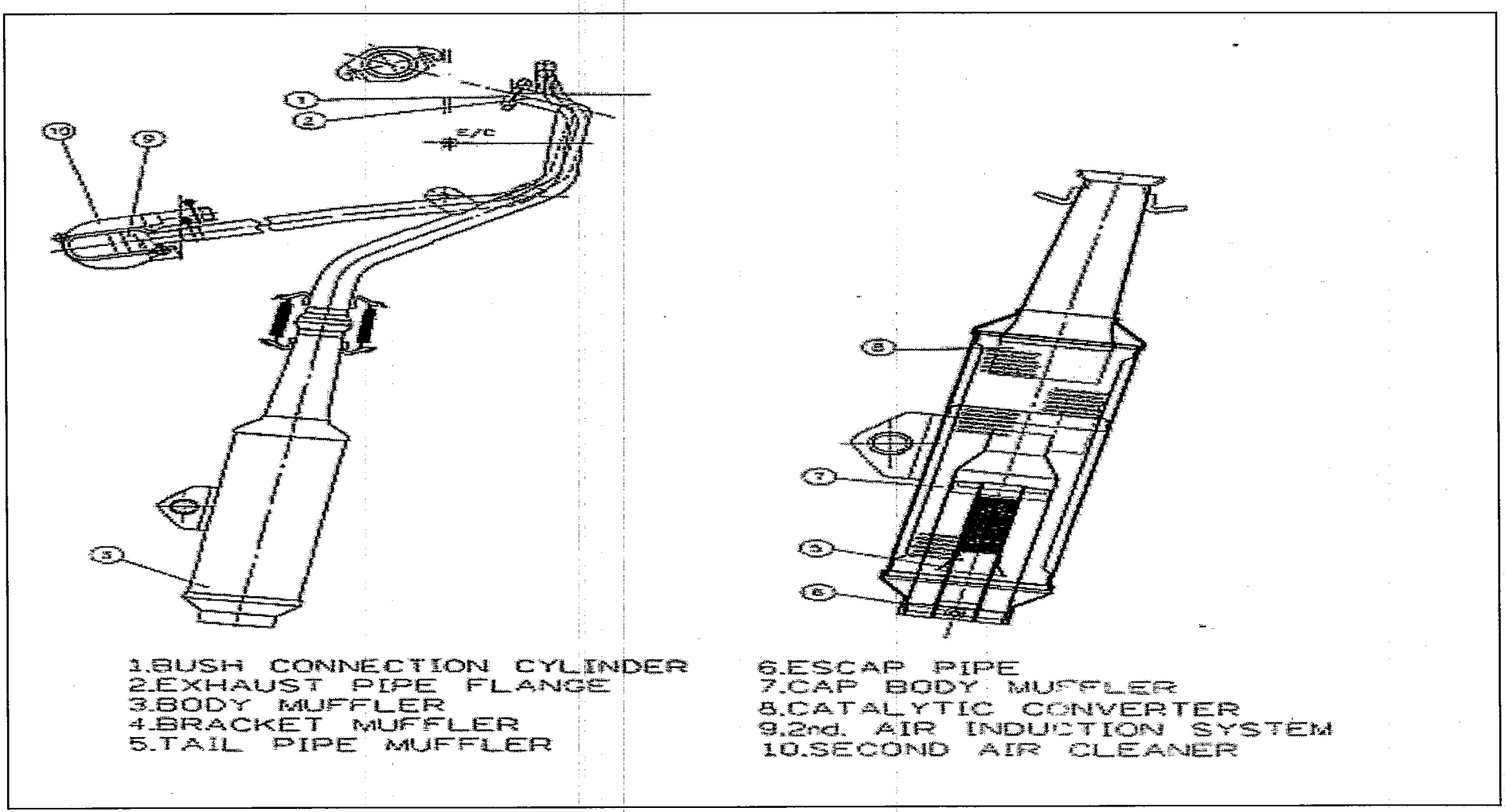


2. To check swingness as figured:



Muffler maintenance:

Clean the escape pipe whenever you feel engine output is decreased.



Remarks: The 2nd air induction system and catalyst device is only available in emission control area.

Carburetor dismantle & inspection:

1. dismantle

- Remove:-carburetor assembly, pipes, cables and wires
- Remove:-high-tension wire

2. adjustment

there are two screws might be adjusted to tuning the engine intake mixture.

- 1st is the stop screw: to adjust the engine idle speed.

- 2nd is the air screw to adjust the air/fuel ratio.

3.Auto-bystart function check

the carburetor is equipped with auto-bystart to improve the engine cold start, it shall be warm after the engine has been starting for 5 minutes.

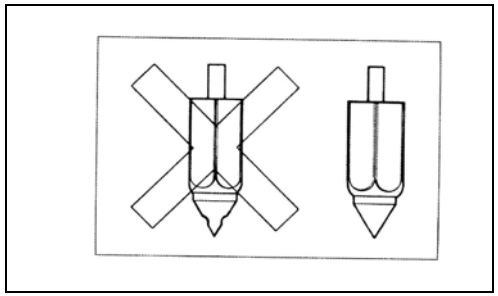
4. Float chamber function check

fuel level is controlled by float assembly, and stopped by valve set. Whenever there is any flooded fuel leaks, check if there is any dirty element or valve set is worn out.

5. Whenever the carburetor is exploded, be careful to install all the parts properly to the original sequence.

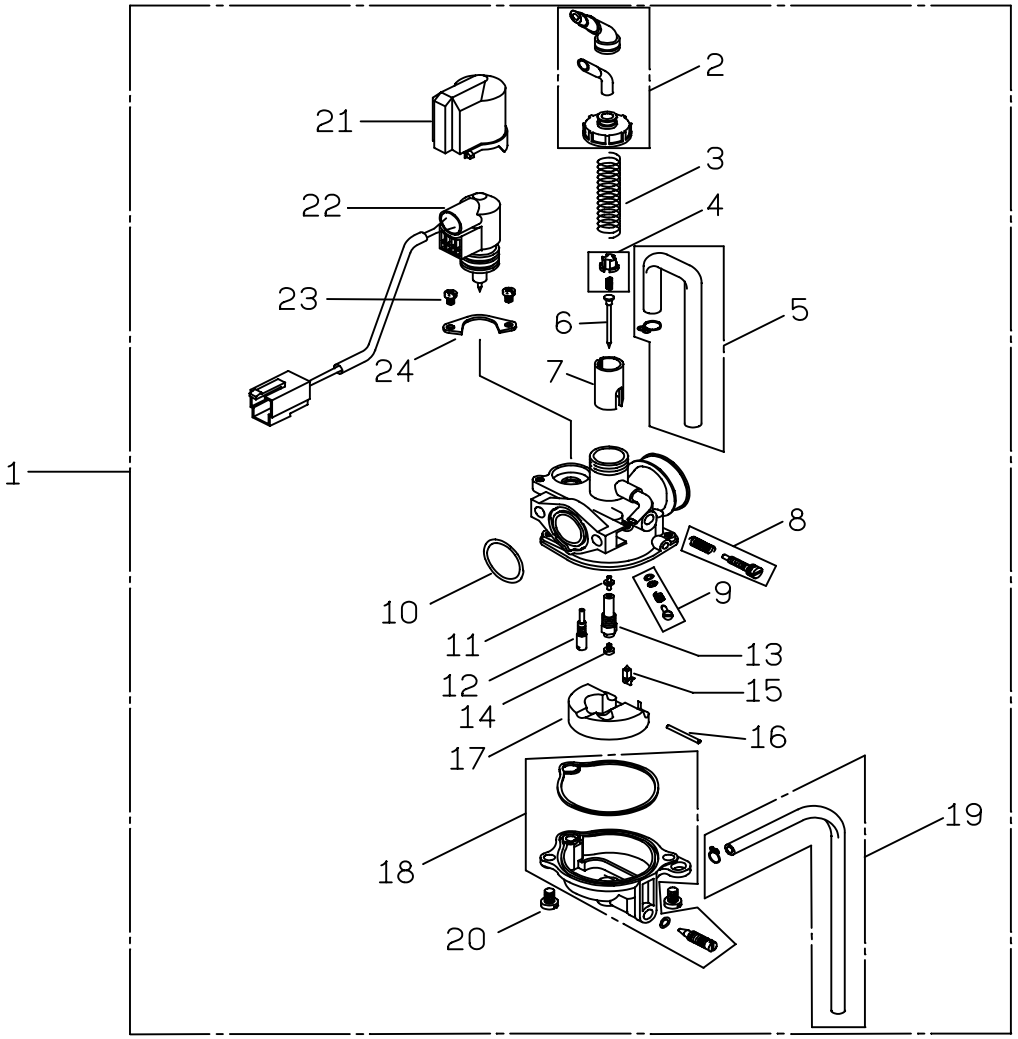
2 stroke engine carburetor

4 stroke engine carburetor

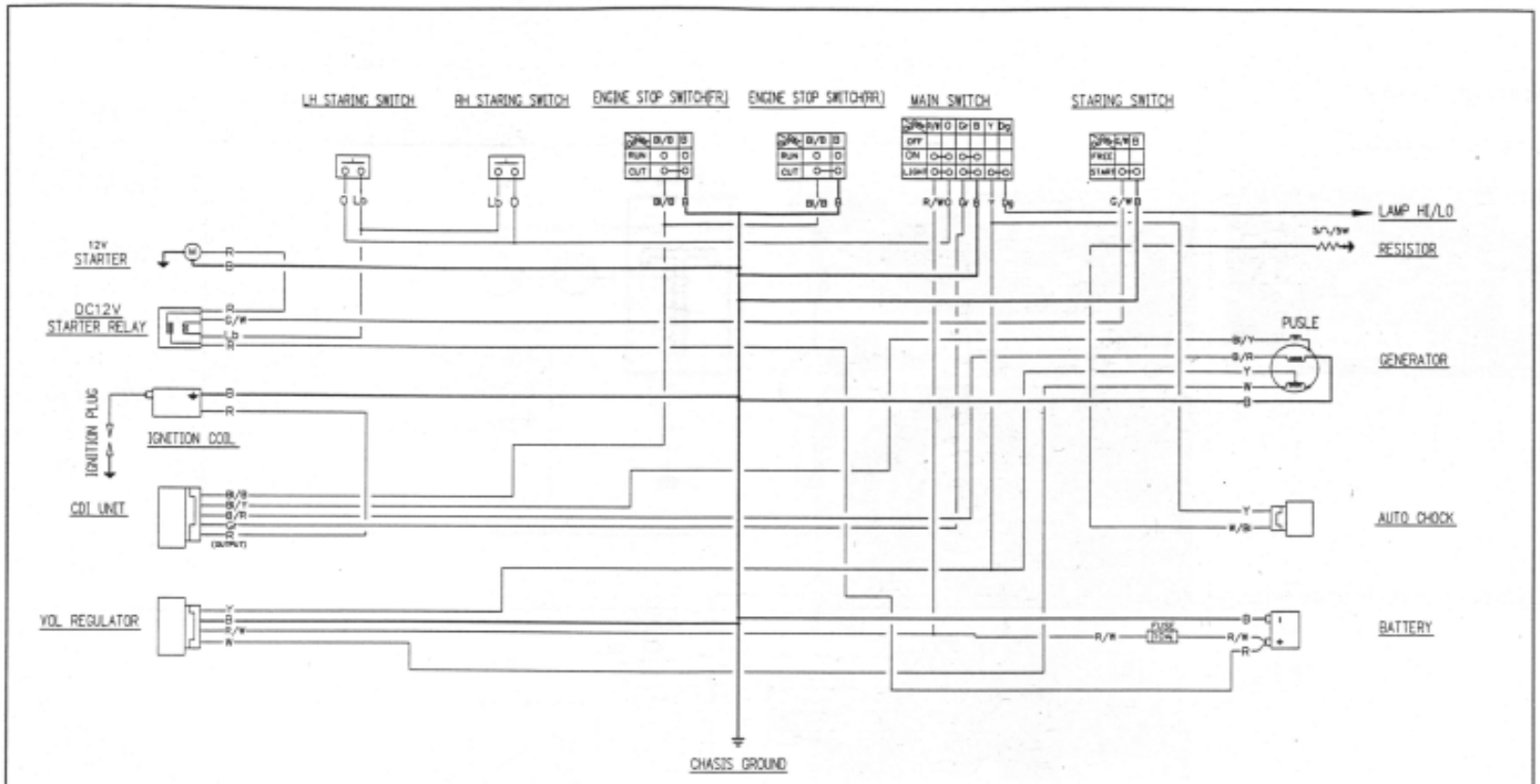


CARBURETOR

01	CARBURETOR ASSY.
02	TOP SET
03	SPG., COMP.
04	PLATE SET
05	TUBE SET
06	JET NEEDLE
07	THROTTLE VALVE
08	SCREW SET
09	SCREW SET (A.S)
10	O RING
11	NEEDLE JET
12	SLOW JET
13	HOLDER, NEEDLE JET
14	MAIN JET
15	FLOAT VALVE SET
16	PIN, ARM
17	FLOAT SET
18	FLOAT CHAMBER SET
19	TUBE SET
20	"SCREW, WASHER"
21	CAP HOLDER
22	AUTO BYSTARTER SET
23	SCREW, WASHER
24	PLATE SET



Wiring diagram



B/R	Black witch Red tracer	B	Black
Bl/B	Blue witch Black tracer	Bl	Blue
Bl/R	Blue witch Red	Dg	Dark Green
Bl/Y	Blue witch Yellow tracer	Gr	Grizzled
G/W	Green witch White tracer	Lb	Light Blue
R/W	Red witch White tracer	O	Orange
W/Bl	White witch Blue tracer	R	Red
		W	White
		Y	Yellow

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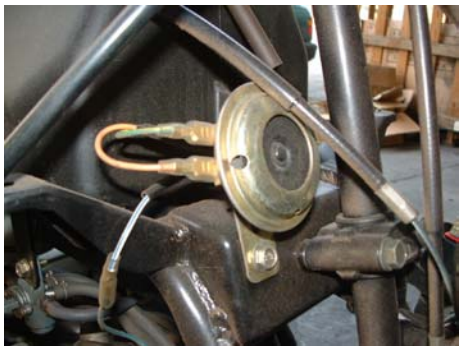
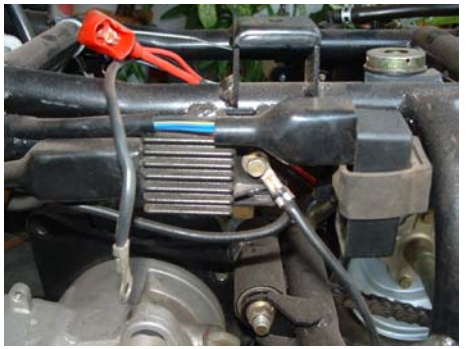
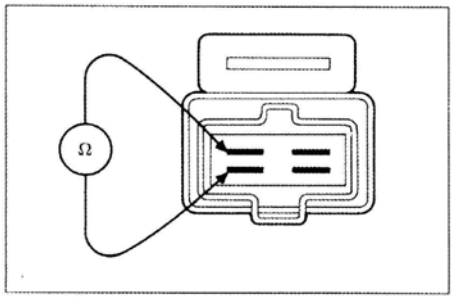
Electric elements in vehicle:

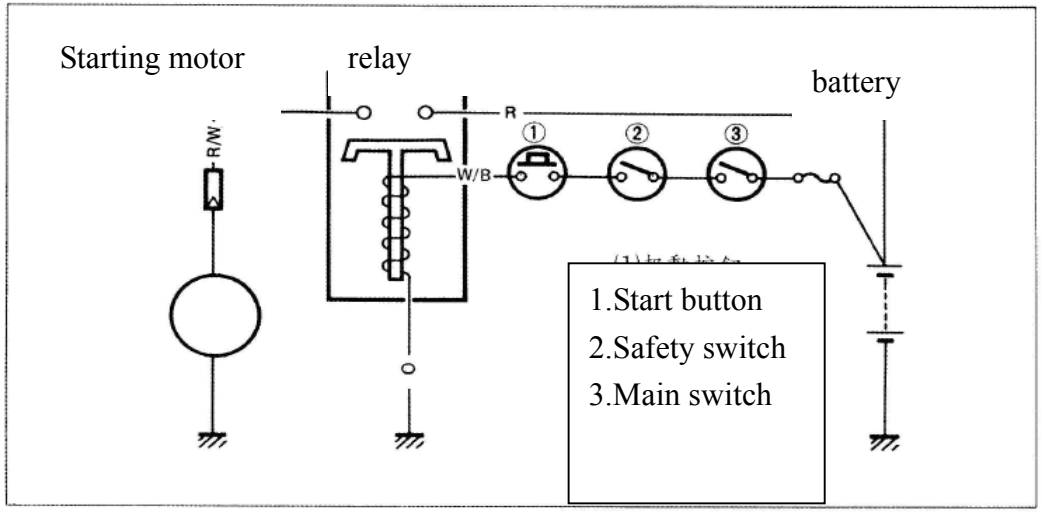
 Main switch (off-on-light)	 Battery & fuse	 horn
 Signal flasher relay	 Starting relay	 Regulator & CDI
 Spark coil	 Oil sensor	 Safety switch

Starting relay inspection

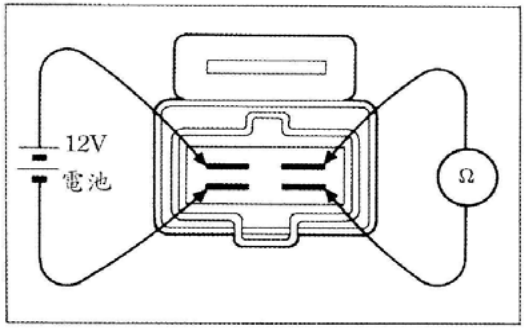
1.System diagram

2.Check the resistance with pocket tester





3.Check the voltage action function with 12V battery

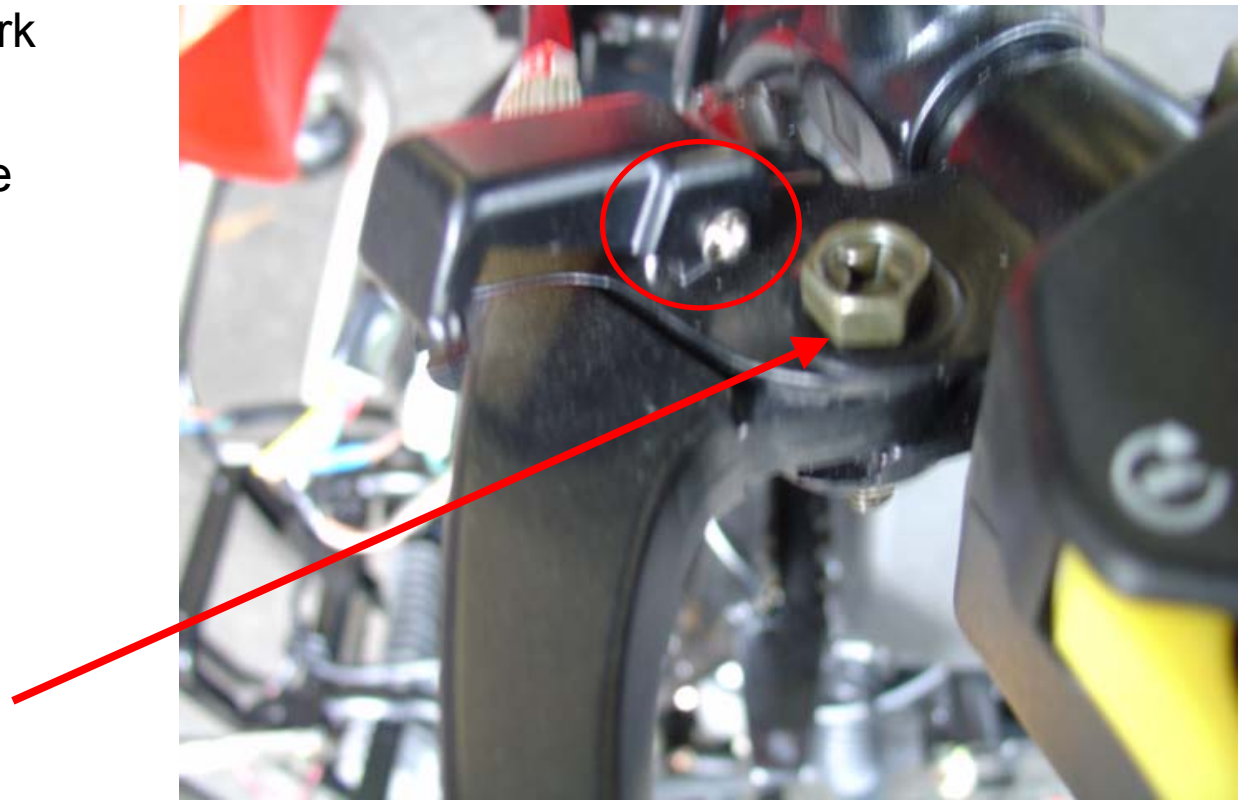


Regulator inspection: measure the resistance according to the following table.

⊖ Probe of tester \ ⊕ Probe of tester	W	Y	R/W	B
W		∞	3 ~ 50	∞
Y	∞		∞	5 ~ 100
R/W	∞	∞		∞
B	∞	5 ~ 100	∞	

OP of replacing Brake Lever for ATV150

1. Dismantle the clip of park stopper.
2. Loosen the bolt of brake lever.

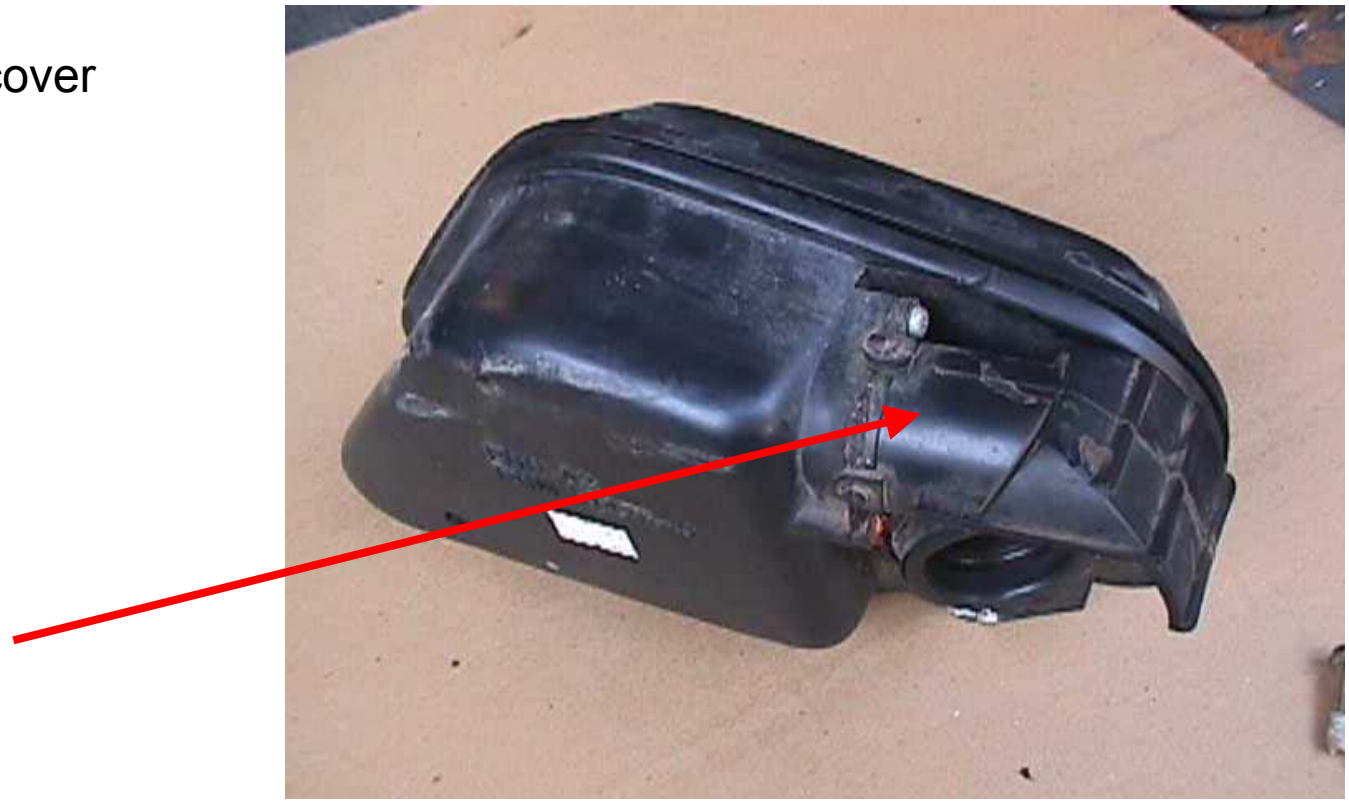


OP of replacing Brake Lever for ATV150

3. Replace the brake lever & park stopper.
4. Lock torque : 1.0 kg-m.

OP OF REPLACING INTAKE PIPE FOR ATV50

1. Take off the cover



OP OF REPLACING INTAKE PIPE FOR ATV50

2. Loosen the 2 screws

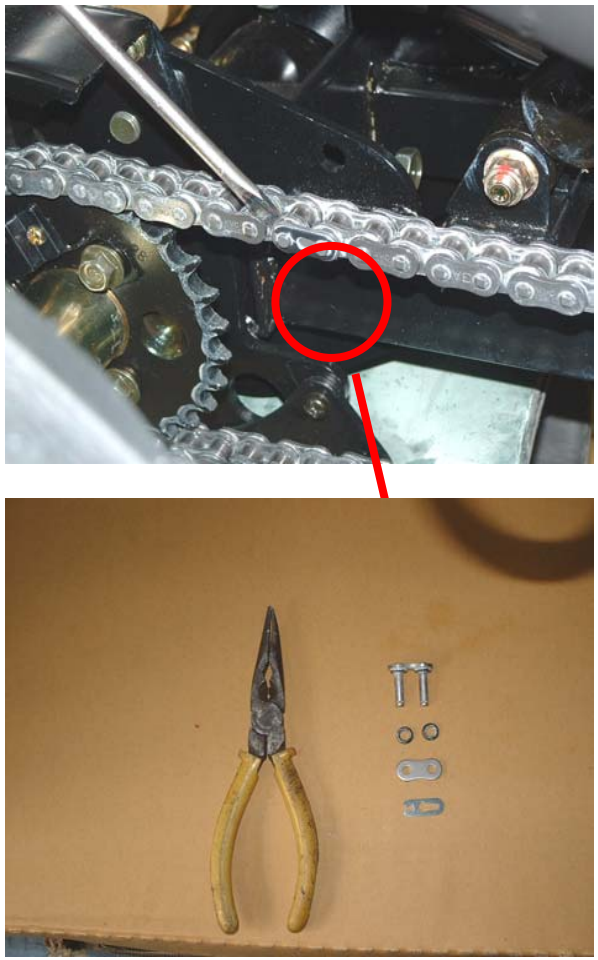
OP OF REPLACING INTAKE PIPE FOR ATV50

3. Take off the intake pipe by a thin tool.

OP OF REPLACING INTAKE PIPE FOR ATV50

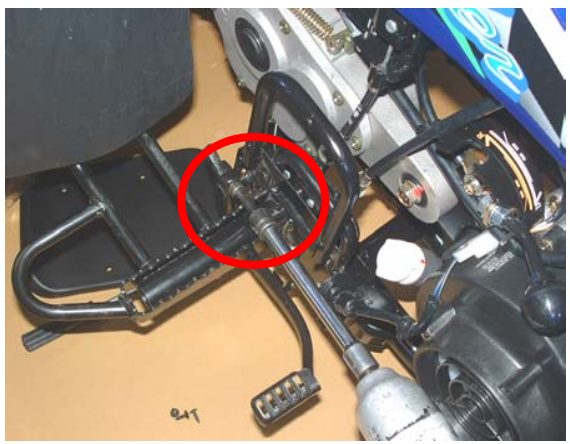
4.Replace the intake pipe

OP of Replacing the Reverse-Gearbox



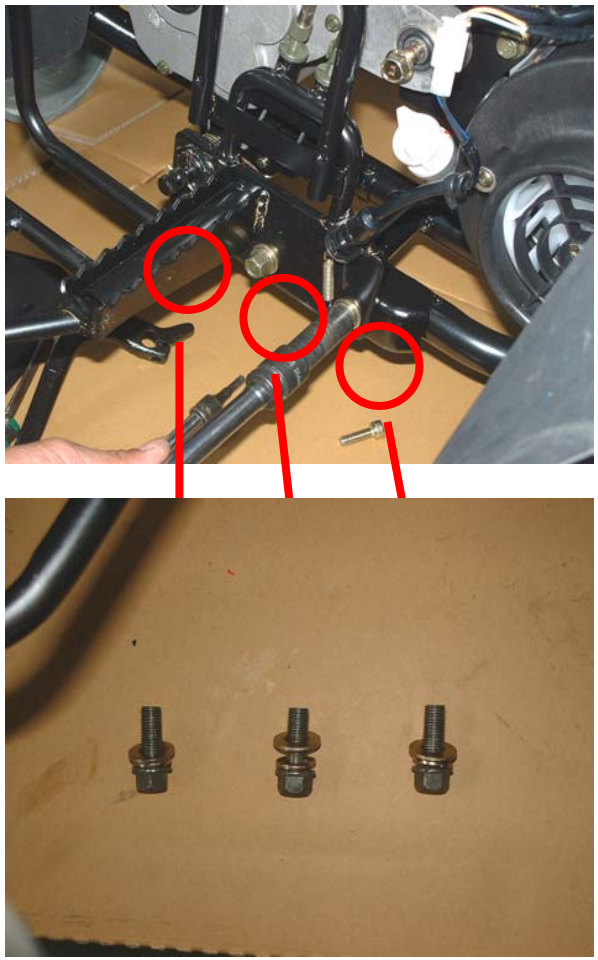
- Step 1:
- Dismantle the chain coupling set with pivor.

OP of Replacing the Reverse-Gearbox



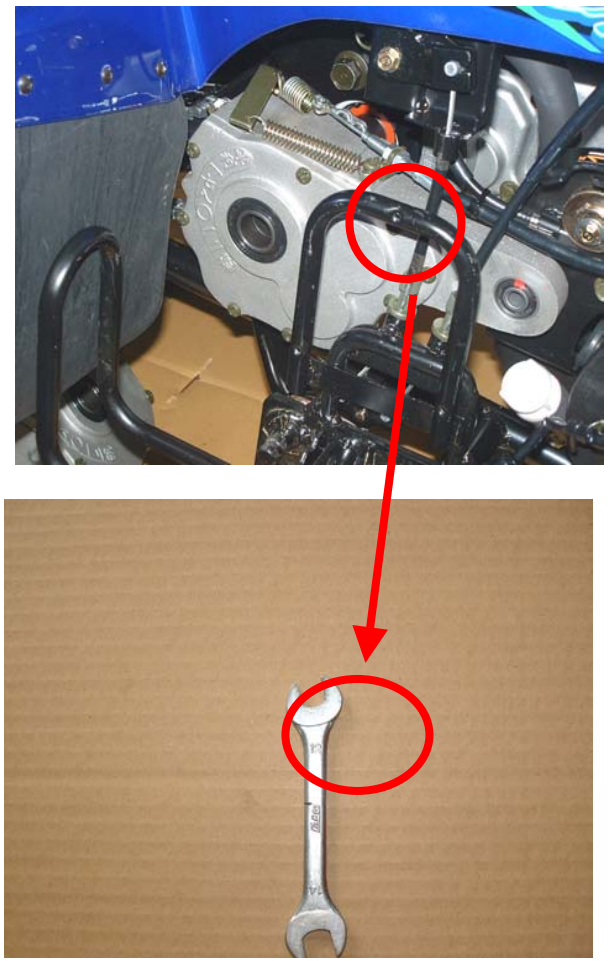
- Step 2
- Dismantle the foot protector
- Loosen bolt (M8) of brake kick

OP of Replacing the Reverse-Gearbox



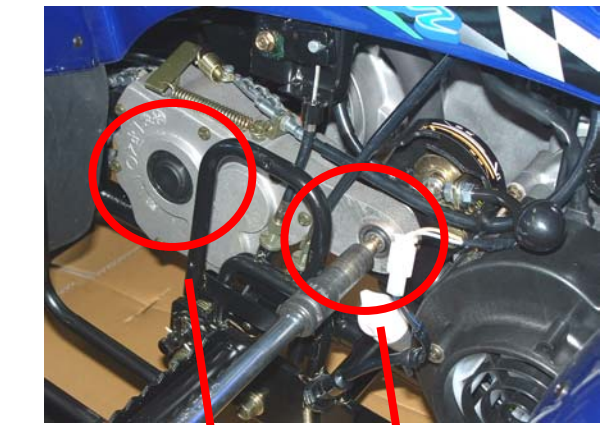
- Step 3 :
- Loosen 3 bolts (M10)

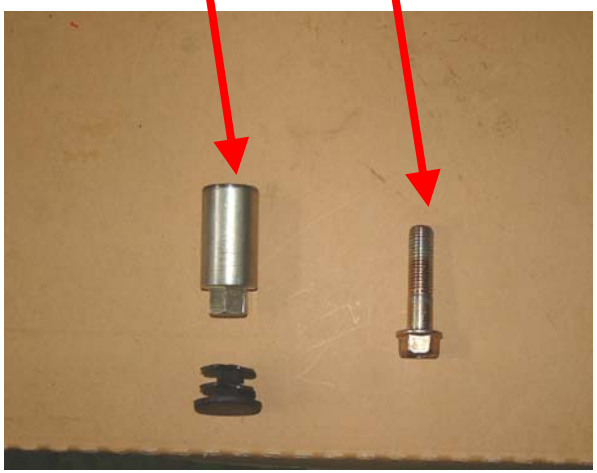
OP of Replacing the Reverse-Gearbox



- Step 4 :
- Dismantle cable of reverse-gearbox

OP of Replacing the Reverse-Gearbox



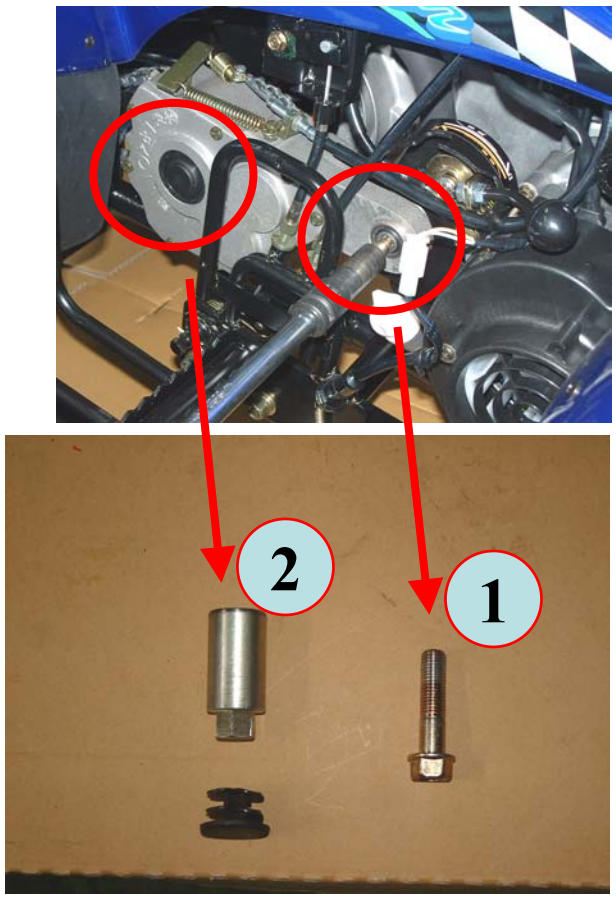


- Step 5 :
- Remove rubber cap & Loosen bolt (M10)

OP of Replacing the Reverse-Gearbox

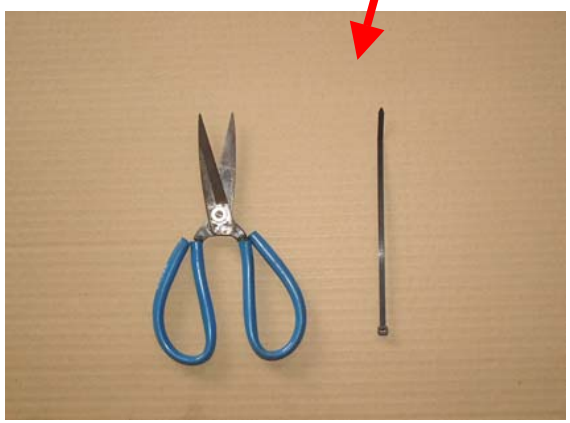
- Step 6 :
- Replace the gearbox set

OP of Replacing the Reverse-Gearbox



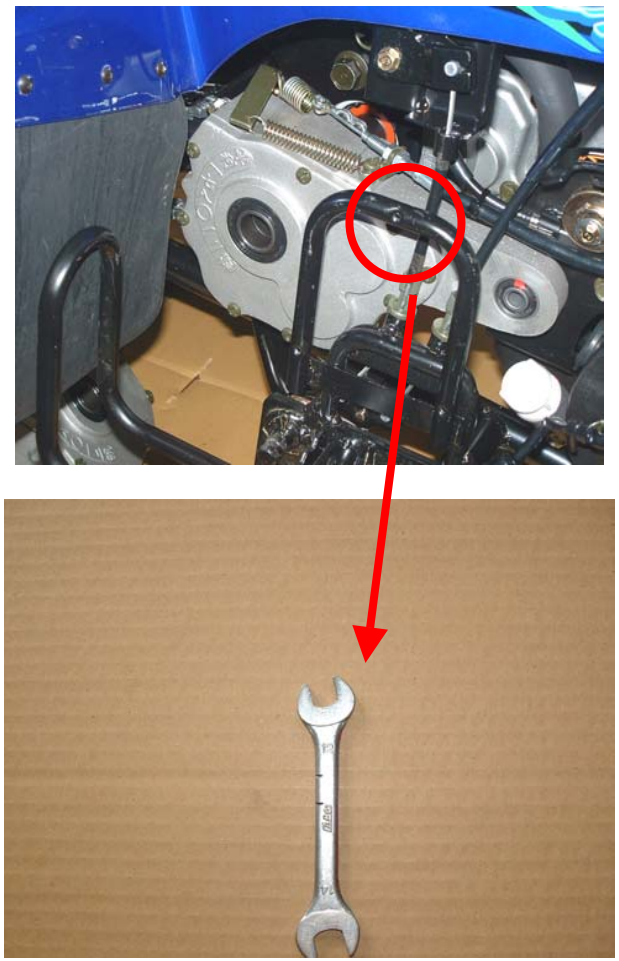
- Step 7 :
- Lock the reverse-gearbox (M10)
- Lock torque: ① 4 kg-m
- ②8~9 kg-m

OP of Replacing the Reverse-Gearbox



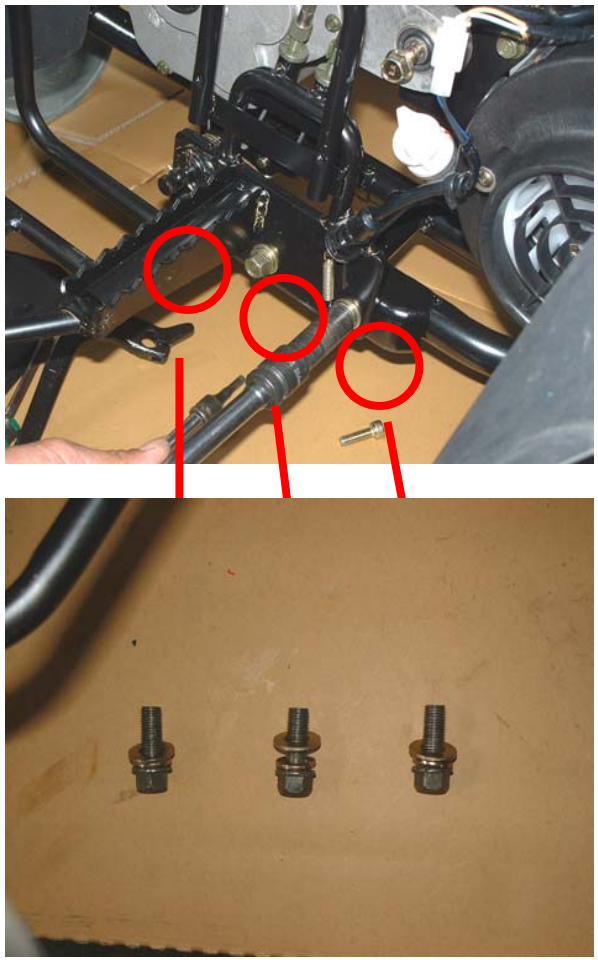
- Step 8 :
- Fix the cable

OP of Replacing the Reverse-Gearbox



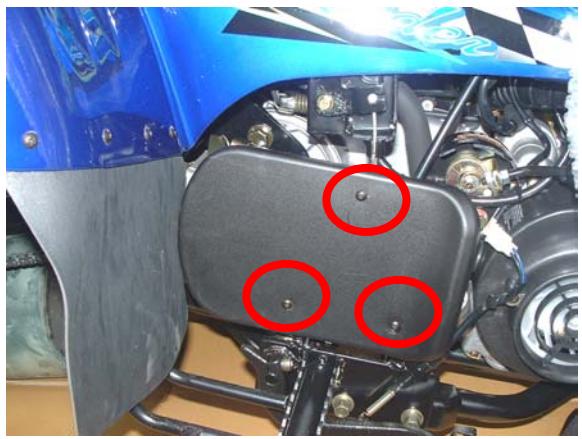
- Step 9 :
- Lock the nut

OP of Replacing the Reverse-Gearbox



- 步驟十：
- Lock the RH stepplate (M10)
- Lock torque: 4.5~5 kg-m

OP of Replacing the Reverse-Gearbox



- Step 11 :
- Lock bolt of brake kick(M8)
- Lock torque: 3 kg-m

OP of Replacing the Reverse-Gearbox

- Step 12 :
- Assemble the driving chain